CHAPTER 1

THE PROPOSED ACTIONS

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1.1. PURPOSE OF AND NEED FOR THE PROPOSED ACTIONS

The proposed Federal actions addressed in this environmental impact statement (EIS) are nine areawide oil and gas lease sales in the Central Planning Area (CPA) and Western Planning Area (WPA) of the Gulf of Mexico Outer Continental Shelf (OCS) (Figure 1-1). Under the proposed *Outer Continental Shelf Oil and Gas Leasing Program: 2002-2007* (5-Year Program), two sales would be held each year — one in the CPA and one in the WPA (Table 1-1). The proposed Central Gulf lease sales are Sale 185 in 2003, Sale 190 in 2004, Sale 194 in 2005, Sale 198 in 2006, and Sale 201 in 2007; the proposed WPA lease sales are Sale 187 in 2003, Sale 192 in 2004, Sale 196 in 2005, and Sale 200 in 2006. The purpose of the proposed Federal actions is to offer for lease those areas that may contain economically recoverable oil and natural gas resources. The proposed lease sales will provide qualified bidders the opportunity to bid upon and lease acreage in the Gulf of Mexico OCS in order to explore, develop, and produce oil and natural gas. This EIS analyzes the potential impacts of the proposed actions on the marine, coastal, and human environments. Although this EIS addresses nine proposed lease sales, at the completion of this EIS process, decisions will be made only for proposed Sale 185 in the CPA and proposed Sale 187 in the WPA. A National Environmental Policy Act (NEPA) review will be conducted for each subsequent proposed lease sale in the 5-Year Program. Formal consultation with other Federal agencies, the affected States, and the public will be carried out to assist in the determination of whether or not the information and analyses in this original multisale EIS are still valid. These consultations and NEPA reviews will be completed before decisions are made on the subsequent sales.

The Outer Continental Shelf Lands Act (OCSLA) of 1953 (67 Stat. 462), as amended (43 U.S.C. 1331 *et seq*. (1988)), established Federal jurisdiction over submerged lands on the OCS seaward of the State boundaries. Under the OCSLA, the Department of the Interior (DOI) is required to manage the leasing, exploration, development, and production of oil and gas resources on the Federal OCS. The Secretary of the Interior (Secretary) oversees the OCS oil and gas program and is required to balance orderly resource development with protection of the human, marine, and coastal environments while simultaneously ensuring that the public receives an equitable return for these resources and that free-market competition is maintained. The Act empowers the Secretary to grant leases to the highest qualified responsible bidder(s) on the basis of sealed competitive bids and to formulate such regulations as necessary to carry out the provisions of the Act. The Secretary has designated the Minerals Management Service (MMS) as the administrative agency responsible for the mineral leasing of submerged OCS lands and for the supervision of offshore operations after lease issuance.

The Central and Western Gulf of Mexico constitutes one of the world's major oil and gas producing areas, and has proved a steady and reliable source of crude oil and natural gas for more than 50 years. Oil from the Gulf of Mexico can help reduce the Nation's need for oil imports and reduce the environmental risks associated with oil tankering. Natural gas is generally considered to be an environmentally preferable alternative to oil, both in terms of the production and consumption.

1.2. DESCRIPTION OF THE PROPOSED ACTIONS

The proposed actions are annual areawide oil and gas lease sales in the CPA and WPA (except for the first lease sale – Sale 184) as scheduled under the proposed 5-Year Program for 2002-2007. Federal regulations allow for several related or similar proposals to be analyzed in one EIS (40 CFR 1502.4). Since each lease sale proposal and projected activities are very similar each year for each planning area, the MMS has decided to prepare a single EIS for the nine CPA and WPA sales in the proposed 5-Year Program. As scheduled in the proposed 5-Year Program and announced in the Area Identification (Area ID), each of the sales is proposed as a planning-area-wide sale; however, the area for each sale, after the first sale in each planning area, will be reviewed during preparation of a sale-specific environmental assessment (EA). The multisale approach is intended to focus the NEPA/EIS process on differences between the proposed sales and on new issues and information. The multisale EIS will eliminate the issuance of complete draft and final EIS's for each annual set of sales in the CPA and WPA.

Each of the CPA and WPA proposed actions includes a lease stipulation for blocks or portions of blocks beyond the United States (U.S.) Exclusive Economic Zone (EEZ) (generally greater than 200 nautical miles (nmi) from the U.S. coastline). Leases on these blocks may be subject to special royalty payments under the provisions of the 1982 Law of the Sea Convention, if the U.S. becomes a party to the Convention prior to or during the life of the lease.

The proposed Central Gulf lease sales are Sale 185 in 2003, Sale 190 in 2004, Sale 194 in 2005, Sale 198 in 2006, and Sale 201 in 2007. The CPA includes about 47.8 million acres (ac) located from 4.8 to 354 kilometers (km) offshore in water depths ranging from 4 to 3,400 meters (m). Each proposed sale would offer for lease all unleased blocks in the CPA, with the following exceptions. The following blocks are deferred from the proposed actions under the "Treaty Between The Government of the United States of America And The Government Of The United Mexican States on the Delimitation Of The Continental Shelf In the Western Gulf of Mexico Beyond 200 Nautical Miles," which took effect in January 2001.

- Blocks in the Lund South area (the area beyond the EEZ known as the Northern Portion of the Eastern Gap (Area NG 16-07)):
  - Lund South Area Blocks 172,173, 213-217, 252-261, 296-305, and 349.
- Blocks in the Amery Terrace Area (the area beyond the EEZ formerly known as the Northern Portion of the Western Gap (Area NG 15-09)) that lie within the 1.4-nmi buffer zone north of the continental shelf boundary between the United States and Mexico:
  - Whole blocks: Amery Terrace Area Blocks 235-238, 273-279, 309-317; and
  - Partial blocks: Amery Terrace Area Blocks 280, 281, 318-320, and 355-359.

The proposed CPA sales include proposed lease stipulations designed to reduce environmental risks. The Topographic Features Stipulation establishes "No Activity Zones" around 16 banks in the CPA. The proposed Live Bottom (Pinnacle Trend) Stipulation establishes detection and avoidance measures to protect pinnacle trend features. The Military Areas Stipulation requires coordination between OCS operators and the Department of Defense to reduce potential multiuse conflicts on the OCS. The stipulation for blocks south of and within 15 mi of Baldwin County, Alabama, requires industry to minimize the visual impacts from development operations in these blocks. It is estimated that each proposed sale could result in the production of 0.276-0.654 billion barrels of oil (BBO) and 1.590-3.300 trillion cubic feet (tcf) of gas.

The proposed annual WPA lease sales are Sale 187 in 2003, Sale 192 in 2004, Sale 196 in 2005, and Sale 200 in 2006. The WPA includes about 35.9 million ac located from 14 to 357 km offshore in water depths ranging from 8 to 3,000 m. Each proposed sale would offer for lease all unleased blocks in the WPA, with the following exceptions:

(1) High Island Area, East Addition, South Extension, Blocks A-375 (East Flower Garden Bank) and A-398 (West Flower Garden Bank), and the portions of other blocks within the boundary of the Flower Garden Banks National Marine Sanctuary.

(2) The following blocks are deferred under the "Treaty Between The Government of the United States of America And The Government Of The United Mexican States on the Delimitation Of The Continental Shelf In the Western Gulf of Mexico Beyond 200 Nautical Miles," which took effect in January 2001.

Blocks in the Sigsbee Escarpment and Keathley Canyon Areas (areas beyond the EEZ formerly known as the Northern Portion of the Western Gap (Areas NG 15-08 and NG 15-05)) that lie within the 1.4-nmi buffer zone north of the continental-shelf boundary between the United States and Mexico:

- Whole blocks: Sigsbee Escarpment Area Blocks 11, 57, 103, 148, 149, 194, 239, 284, and 331-341; and
- Partial blocks: Keathley Canyon Area Blocks 978-980; and Sigsbee Escarpment Area Blocks 12-14, 58-60, 104-106, 150, 151, 195, 196, 240, 241, 285-298, and 342-349.

The proposed WPA lease sales include proposed lease stipulations designed to reduce environmental risks. The Topographic Features Stipulation establishes "No Activity Zones" around 23 banks in the WPA. The Military Areas Stipulation requires coordination between OCS operators and the Department of Defense to reduce potential multiuse conflicts on the OCS. The Naval Mine Warfare Area Stipulation restricts the use of sea-surface structures in areas identified by the Navy as needed for testing equipment and for training mine warfare personnel. It is estimated that each proposed lease sale in the WPA could result in the production of 0.136-0.262 BBO and 0.810-1.440 tcf of gas.

Although this EIS addresses nine proposed sale actions, only two sales (one in the CPA and one in the WPA) are proposed to be held each year. At the completion of this EIS process, decisions will be made only for proposed CPA Sale 185 and proposed WPA Sale 187, scheduled for 2003. Subsequent to these first sales, an EA and formal consultation with other Federal agencies, the affected States, and the public will be completed before decisions are made on proposed sales. The EA will result in either a Finding of No New Significant Impact (FONNSI) or the determination that the preparation of a Supplemental EIS (SEIS) is warranted. The EA, and SEIS if deemed necessary, will use much of the material contained in this initial multisale EIS and will incorporate this material by reference.

The proposed action analyses in this EIS address one "typical" CPA sale and one "typical" WPA sale. A set of ranges for resource estimates, projected exploration and development activities, and impact-producing factors developed for each "typical" proposed action are presented. The analyses of these "typical" proposed actions are expected to be "typical" of any of the proposed CPA or WPA sales scheduled in the 5-Year Program. In other words, each of the proposed sales in the 5-Year Program is expected to be within the ranges used for the analyzed "typical" proposed action in the corresponding planning area.

1.3. REGULATORY FRAMEWORK

Federal laws mandate the OCS leasing program and the environmental review process. Several Federal regulations establish specific consultation and coordination processes with Federal, State, and local agencies. In addition, the OCS leasing process and all activities and operations on the OCS must comply with other Federal, State, and local laws and regulations. The following are summaries of the major, applicable, Federal laws and regulations.

Outer Continental Shelf Lands Act

The OCSLA of 1953 (43 U.S.C. 1331 *et seq*.), as amended, established Federal jurisdiction over submerged lands on the OCS seaward of State boundaries. The Act, as amended, provides guidelines for implementing an OCS oil and gas exploration and development program. The basic goals of the Act include the following:

- to establish policies and procedures for managing the oil and natural gas resources of the OCS that are intended to result in expedited exploration and development of the OCS in order to achieve national economic and energy policy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade;
- to preserve, protect, and develop oil and natural gas resources of the OCS in a manner that is consistent with the need
  - — to make such resources available to meet the Nation's energy needs as rapidly as possible;

  - to balance orderly resource development with protection of the human, marine, and coastal environments;
  - to ensure the public a fair and equitable return on the resources of the OCS; and
  - to preserve and maintain free enterprise competition; and
- to encourage development of new and improved technology for energy resource production, which will eliminate or minimize the risk of damage to the human, marine, and coastal environments.

Under the OCSLA, the Secretary of the Interior is responsible for the administration of mineral exploration and development of the OCS. Within the Department of the Interior, the MMS is charged with the responsibility of managing and regulating the development of OCS oil and gas resources in accordance with the provisions of the OCSLA. The MMS operating regulations are in Chapter 30, Code of Federal Regulations, Part 250 (30 CFR 250); 30 CFR 251; and 30 CFR 254.

Under Section 20 of the OCSLA, the Secretary shall ". . . conduct such additional studies to establish environmental information as he deems necessary and shall monitor the human, marine, and coastal environments of such area or region in a manner designed to provide time-series and data trend information which can be used for comparison with any previously collected data for the purpose of identifying any significant changes in the quality and productivity of such environments, for establishing trends in the area studied and monitored, and for designing experiments to identify the causes of such changes." Through the Environmental Studies Program (ESP), the MMS conducts studies designed to provide information on the current status of resources of concern and notable changes, if any, resulting from OCS Program activities.

In addition, the OCSLA provides a statutory foundation for coordination with the affected States and, to a more limited extent, local governments. At each step of the procedures that lead to lease issuance, participation from the affected States and other interested parties is encouraged and sought.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq*.) provides a national policy that encourages "productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man . . . ." The NEPA requires that all Federal agencies use a systematic, interdisciplinary approach to protection of the human environment; this approach will ensure the integrated use of the natural and social sciences in any planning and decisionmaking that may have an impact upon the environment. The NEPA also requires the preparation of a detailed EIS on any major Federal action that may have a significant impact on the environment. This EIS must address any adverse environmental effects that cannot be avoided or mitigated, alternatives to the proposed action, the relationship between short-term uses and long-term productivity of the environment, and any irreversible and irretrievable commitments of resources involved in the project.

In 1979, the Council on Environmental Quality (CEQ) established uniform guidelines for implementing the procedural provisions of NEPA. These regulations (40 CFR 1500 to 1508) provide for the use of the NEPA process to identify and assess the reasonable alternatives to proposed actions that avoid or minimize adverse effects of these actions upon the quality of the human environment. "Scoping" is used to identify the scope and significance of important environmental issues associated with a proposed Federal action through coordination with Federal, State, and local agencies; the public; and any interested individual or organization prior to the development of an impact statement. The process is also intended to identify and eliminate, from further detailed study, issues that are not significant or that have been covered by prior environmental review.

The Marine Mammal Protection Act

Under the Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. 1361 *et seq*.), the Secretary of Commerce is responsible for all cetaceans and pinnipeds, except walruses; authority for implementing

the Act is delegated to the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), formerly known as the National Marine Fisheries Service (NMFS). The Secretary of the Interior is responsible for walruses, polar bears, sea otters, manatees, and dugongs; authority is delegated to the Fish and Wildlife Service (FWS). The Act established the Marine Mammal Commission (MMC) and its Committee of Scientific Advisors on Marine Mammals to provide oversight and advice to the responsible regulatory agencies on all Federal actions bearing upon the conservation and protection of marine mammals.

The MMPA established a moratorium on the taking of marine mammals in waters under U.S. jurisdiction. The MMPA defines "take" to mean "to harass, harm, shoot, wound, trap, hunt, capture, or kill, or attempt to engage in any such conduct (including actions that induce stress, adversely impact critical habitat, or result in adverse secondary or cumulative impacts)." Harassment is the most common form of taking associated with OCS Program activities. The moratorium may be waived when the affected species or population stock is within its optimum sustainable population range and will not be disadvantaged by an authorized taking (e.g., will not be reduced below its maximum net productivity level, which is the lower limit of the optimum sustainable population range). The Act directs that the Secretary, upon request, authorize the unintentional taking of small numbers of marine mammals incidental to activities other than commercial fishing (e.g., offshore oil and gas exploration and development) when, after notice and opportunity for public comment, the Secretary finds that the total of such taking during the 5-year (or less) period will have a negligible impact on the affected species. The MMPA also specifies that the Secretary shall withdraw, or suspend, permission to take marine mammals incidental to oil and gas and other activities if, after notice and opportunity for public comment, the Secretary finds (1) that the applicable regulations regarding methods of taking, monitoring, or reporting are not being complied with or (2) the taking is, or may be, having more than a negligible impact on the affected species or stock.

In 1994, a subparagraph (D) was added to the MMPA to simplify the process for obtaining "small take" exemptions when unintentional taking incidental to activities such as offshore oil and gas development is by harassment only. Specifically, incidental take (IT) by harassment can now be authorized by permit for periods of up to one year (as opposed to the lengthy regulation/Letter of Authorization process that was formerly in effect). The new language also sets a 120-day time limit for processing harassment IT authorizations.

In October 1995, NOAA Fisheries issued regulations (50 CFR 228) authorizing and governing the taking of bottlenose and spotted dolphins incidental to the explosive removal of oil and gas drilling and production structures in State waters and on the Gulf OCS for a period of five years (*Federal Register*, 1995a). Letters of Authorization must be requested from, and issued to, individual applicants (operators) to conduct the activities (structure removals) pursuant to the regulations. Since 1986, the MMS, the U.S. Army Corp of Engineers, operators, and removal contractors have been following strict NOAA Fisheries requirements in order to avoid the incidental taking of marine mammals and to prevent adverse impacts to endangered sea turtles. Regulations allowing for the incidental taking of coastal dolphin species by harassment (Subpart M of 50 CFR 216) expired in November 2000. The MMS and NOAA Fisheries are working to develop improved measures to minimize the take of marine mammals and endangered or threatened species as a result of removing OCS structures using explosives. During the interim period while new Subpart M regulations are being formalized, OCS lessees and operators are required to follow, at a minimum, the mandatory mitigation measures set forth in the expired Subpart M regulations.

To ensure that OCS activities adhere to the MMPA, the MMS has conducted studies to identify possible associations between cetaceans and high-use areas of the northern Gulf of Mexico. For example, MMS and the Biological Resources Division (BRD) of the U.S. Geological Survey (USGS) funded the "GulfCet" (Gulf cetaceans) Program, which was conducted jointly by Texas A&M University at Galveston and NOAA Fisheries. The purpose of GulfCet was to determine the distribution and abundance of cetaceans along the continental slope in the northern Gulf of Mexico and to help MMS assess the potential effects of deepwater oil and gas exploration and production on marine mammals in the Gulf of Mexico. The studies included systematic aerial and shipboard (visual and acoustic) surveys, behavioral observations, and photo-identification of individual sperm whales. During 1991-1994, the GulfCet I study examined seasonal and geographic distribution of cetaceans along the continental slope in the north-central and western Gulf (Davis and Fargion, 1996). GulfCet II (1996-1997) was designed, in part, to determine the distribution and abundance of whales and dolphins in the Eastern Gulf, an area of

potential oil and gas exploration and production (Davis et al., 2000). Another component of GulfCet II was to conduct focal studies specifically designed to address whale and dolphin associations with habitats (physical environment and available prey). The GulfCet Program demonstrated that whales and dolphins are not sighted randomly throughout the northern Gulf. Cetacean distribution is influenced by both bottom depth and by the presence of mesoscale hydrographic features.

The Endangered Species Act

The Endangered Species Act (ESA) (16 U.S.C. 1631 *et seq*.) of 1973, as amended (43 U.S.C. 1331 *et seq*.), establishes a national policy designed to protect and conserve threatened and endangered species and the ecosystems upon which they depend. The ESA is administered by FWS and NOAA Fisheries. Section 7 of the ESA governs interagency cooperation and consultation. Under Section 7, MMS formally consults with NOAA Fisheries and FWS to ensure that activities in the OCS under MMS jurisdiction do not jeopardize the continued existence of threatened or endangered species and/or result in adverse modification or destruction of their critical habitat. The results of these consultations are presented as a Biological Opinion (BO).

The FWS and NOAA Fisheries make recommendations on the modification of oil and gas operations to minimize adverse impacts, although it remains the responsibility of MMS to ensure that proposed OCS activities do not impact threatened and endangered species. If an unauthorized taking occurs, or if the authorized level of incidental take (as described in the previous section) is exceeded, reinitiation of formal consultation is required.

The MMS Environmental Studies Program (Chapter 1.6) complies with the ESA's intent of conserving endangered or threatened species by contracting research on sea turtles and cetaceans.

The Clean Air Act

The 1970 Clean Air Act (CAA) (42 U.S.C. 7401 *et seq*.) established the National Ambient Air Quality Standards (NAAQS). The CAA required Federal promulgation of national primary and secondary standards. The primary NAAQS standards are to protect public health; the secondary standards are to protect public welfare. Under the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) sets limits on how much of a pollutant can be in the air anywhere in the United States. Although the CAA is a Federal law covering the entire country, the states do much of the work to carry out the Act. The law allows individual states to have stronger pollution controls, but states are not allowed to have weaker pollution controls than those set for the whole country. The law recognizes that it makes sense for states to take the lead in carrying out the CAA because pollution control problems often require special understanding of local industries, geography, housing patterns, etc.

States may have to develop state implementation plans (SIP's) that explain how each state will come into or remain in compliance with the CAA, as amended. The states must involve the public, through hearings and opportunities to comment, in the development of the SIP. The USEPA must approve the SIP, and if the SIP is not acceptable, USEPA can take over enforcing the CAA, as amended, in that state. The U.S. Government, through USEPA, assists the states by providing scientific research, expert studies, engineering designs, and money to support clean air programs.

The CAA established the Prevention of Significant Deterioration (PSD) program to protect the quality of air in the regions of the United States where the air is cleaner than required by the NAAQS. Under the PSD program, air quality attainment areas in the United States were classified as Class I or Class II (a Class III designation was codified but no areas were classified as such). Class I areas receive the most protection. Any new major (250 tons per year or larger) permanent source of emissions is required to receive a review by the Federal permitting agency, and the Federal permitting agency must consult with the appropriate Federal land manager prior to granting approval. The FWS is the Federal land manager for Breton, St Marks, Okefenokee, and Chassahowitzka Class I areas. The National Park Service (NPS) is the Federal land manager for the Everglades Class I area.

The CAA, as amended, delineates jurisdiction of air quality between the USEPA and DOI. For OCS operations in the Gulf of Mexico, those operations east of 87.5°W. longitude are subject to USEPA air quality regulations and those west of 87.5°W. longitude are subject to MMS air quality regulations. In the OCS areas under MMS jurisdiction, the MMS regulations at 30 CFR 250 are in force.

The 1990 Clean Air Act Amendments (CAAA) (Public Law No. 101-549)) required that MMS conduct and complete a study to evaluate impacts from the development of OCS petroleum resources in the Gulf on air quality in the ozone nonattainment areas. (Florida was not included in the study area since, at that time, the counties in the Panhandle were in compliance with the Federal ozone standard.) That study was completed in late 1995. Based on the results of this study, the Secretary has consulted with the USEPA Administrator to determine if new requirements are needed for the OCS areas in the Gulf of Mexico that remain under MMS jurisdiction (the areas west of 87°30′W. longitude). Based on the consultation, it was determined that no new requirements are needed at this time.

The MMS air quality regulations are at 30 CFR 250 Subpart C. These regulations are based on potential impacts; as such, the farther away from shore, the larger the allowable emission rate before an air quality impact analysis is required. All OCS plans are required to include emission information and receive air quality review. The regulations allow MMS to select which OCS plans require emissions information for air quality review. In 1994, the Gulf of Mexico Region issued a Letter to Lessees requiring operators to submit standardized emissions information with all OCS plans. This requirement is more stringent than corresponding onshore requirements because MMS applies the same exemption levels and significance levels to temporary sources as it does to permanent sources. Under the onshore PSD regulations temporary sources are typically exempt from air quality permitting requirements. The MMS's impact-based regulations establish a three-tier process for identifying potentially significant emission sources. There are no screening models developed for offshore use. The only model approved by USEPA as a preferred model for modeling offshore emission sources' impacts upon onshore areas is the Offshore and Coastal Dispersal (OCD) model developed by MMS in 1989. The OCD model is based on steady-state Gaussian assumptions.

The Clean Water Act

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972. The CWA establishes the basic structure for regulating discharges of pollutants to waters of the United States. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters without a National Pollution Discharge Elimination System (NPDES) permit. The USEPA may not issue a permit for a discharge into ocean waters unless the discharge complies with the guidelines established under Section 403(c). These guidelines are intended to prevent degradation of the marine environment and require an assessment of the effect of the proposed discharges on sensitive biological communities and aesthetic, recreation, and economic values, both directly and as a result of biological, physical, and chemical processes altering the discharges.

All waste streams generated from offshore oil and gas activities are regulated by the USEPA, primarily by general permits. Under Sections 301 and 304 of the CWA, USEPA issues technology-based effluent guidelines that establish discharge standards based on treatment technologies that are available and economically achievable. The most recent effluent guidelines for the oil and gas extraction point-source category were published in 1993 (58 FR 12454). Within the Gulf of Mexico, USEPA Region 4 has jurisdiction over the eastern portion of the Gulf, including all of the OCS Eastern Planning Area and part of the CPA off the coasts of Alabama and Mississippi. The USEPA's Region 6 has jurisdiction over the majority of the CPA and all of the WPA. Each region has promulgated general permits for discharges that incorporate the 1993 effluent guidelines as a minimum. In some instances, a site-specific permit is required. The USEPA also published new guidelines for the discharge of synthetic-based drilling fluids (SBF) on January 22, 2001 (66 FR 6850).

The USEPA Region 4 general permit was issued on October 16, 1998 (63 FR 55718), was modified on March 14, 2001 (66 FR 14988), and expires on October 31, 2003. Region 4 has not revised the general permit to incorporate new guidelines for SBF and other nonaqueous-based drilling fluids. The USEPA Region 6 general permit was issued on November 2, 1998 (63 FR 58722), was modified on April 19, 1999 (64 FR 19156), and expires in April 2004. On December 18, 2001, Region 6 published a notice of revision to the general permit, which became effective on February 16, 2002. The revision authorizes the discharge of drill cuttings produced using SBF and other nonaqueous-based drilling fluids and wastewater used to pressure test existing piping and pipelines.

Other sections of the CWA also apply to offshore oil and gas activities. Section 404 of the CWA requires a Corps of Engineers' (COE) permit for the discharge or deposition of dredged or fill material in all the waters of the United States. Approval by the COE, with consultation from other Federal and State

agencies, is also required for installing and maintaining pipelines in coastal areas of the Gulf of Mexico. Section 303 of the CWA provides for the establishment of water quality standards that identify a designated use for waters (e.g., fishing/swimming). States have adopted water quality standards for ocean waters within their jurisdiction (waters of the territorial sea that extend out to 3 mi off Louisiana, Mississippi, and Alabama, and 3 leagues off Texas and Florida). Section 402(b) of the CWA authorizes USEPA approval of State permit programs for discharges from point sources.

The Oil Pollution Act

The Oil Pollution Act of 1990 (OPA or OPA 90) (33 U.S.C. 2701 *et seq*.) is comprehensive legislation that includes, in part, provisions to (1) improve oil-spill prevention, preparedness, and response capability; (2) establish limitations on liability for damages resulting from oil pollution; and (3) implement a fund for the payment of compensation for such damages.

The OPA, in part, revised Section 311 of the Clean Water Act to expand Federal spill-response authority, increase penalties for spills, establish U.S. Coast Guard (USCG) prepositioned oil-spill response equipment sites, require vessel and facility response plans, and provide for interagency contingency plans. Many of the statutory changes required corresponding revisions to the National Oil and Hazardous Substances Pollution Contingency Plan.

If a spill or substantial threat of a spill of oil or a hazardous substance from a vessel, offshore facility, or onshore facility is considered to be of such a size or character to be a substantial threat to the public health or welfare of the U.S., under provisions of the Act, the President (through the USCG) now has the authority to direct all Federal, State, and private actions to remove a spill or to mitigate or prevent the threat of the spill. Potential impacts from spills of oil or a hazardous substance to fish, shellfish, wildlife, other natural resources, or the public and private beaches of the U.S. would be an example of the degree or type of threat considered to be of such a size or character to be a substantial threat to the U.S. public health or welfare. In addition, the USCG's authority to investigate marine accidents involving foreign tankers was expanded to include accidents in the Exclusive Economic Zone. The Act also established USCG oil-spill district response groups (including equipment and personnel) in each of the 10 USCG districts, with a national response unit, the National Strike Force Coordination Center, located in Elizabeth City, North Carolina.

The OPA strengthened spill planning and prevention activities by providing for the establishment of interagency spill contingency plans for areas of the U.S. To achieve this goal, Area Committees composed of qualified Federal, State, and local officials were created to develop Area Contingency Plans. The OPA mandates that contingency plans address the response to a "worst case" oil spill or a substantial threat of such a spill. It also required that vessels and both onshore and offshore facilities have response plans approved by the President. These plans were required to adhere to specified requirements, including the demonstration that they had contracted with private parties to provide the personnel and equipment necessary to respond to or mitigate a "worst case" spill. In addition, the Act provided for increased penalties for violations of statutes related to oil spills, including payment of triple costs by persons who fail to follow contingency plan requirements.

The Act further specifies that vessel owners, not cargo owners, are liable for spills and raises the liability limits from $150 per gross ton to $1,200 per gross ton for vessels. The maximum liability for offshore facilities is set at $75 million plus unlimited removal costs; liability for onshore facilities or a deepwater port is set at $350 million. Willful misconduct, violation of any Federal operating or safety standard, failure to report an incident, or refusal to participate in a cleanup subjects the spiller to unlimited liability under provisions of the Act.

Pursuant to the Act, double hulls are required on all newly constructed tankers. Double hulls or double containment systems are required on all tank vessels less than 5,000 gross tons (i.e., barges). Since 1995, existing single-hull tankers are being phased out based on size and age.

An Interagency Coordinating Committee on Oil Pollution Research was established by the provisions of the Act and tasked with submitting a plan for the implementation of an oil-pollution research, development, and demonstration program to Congress. The plan was submitted to Congress in April 1992. This program addressed, in part, an identification of important oil-pollution research gaps, an establishment of research priorities and goals, and an estimate of the resources and timetables necessary to accomplish the identified research tasks.

In October 1991, Executive Order 12777 delegated the provisions of OPA to various departments and agencies within the U.S. Government, including the USCG, USEPA, Department of Transportation (DOT), and DOI. The Secretary of the Interior was delegated Federal Water Pollution Control Act authority over offshore facilities and associated pipelines (except deepwater ports) for all Federal and State waters. The Secretary's functions under the Executive Order include spill prevention, Oil Spill Contingency Plans (OSCP's), equipment, financial responsibility certification, and civil penalties.

The Oil Spill Liability Trust Fund (OSLTF), authorized under OPA and administered by the USCG, is available to pay for removal costs and damages not recovered from responsible parties. The Fund provides up to $1 billion per incident for cleanup costs and other damages. The OSLTF was originally established under Section 9509 of the Internal Revenue Code of 1986. It was one of several similar Federal trust funds funded by various levies set up to provide for the costs of water pollution. The OPA generally consolidated the liability and compensation schemes of these prior Federal oil pollution laws and authorized the use of the OSLTF, which consolidated the funds supporting those regimes. Those prior laws included the Federal Water Pollution Control Act, Trans-Alaska Pipeline Authorization Act, Deepwater Port Act, and Outer Continental Shelf Lands Act. On February 20, 1991, the National Pollution Funds Center (NPFC) was commissioned to serve as fiduciary agent for the OSLTF.

The OPA 90 provides that parties responsible for offshore facilities demonstrate, establish, and maintain oil-spill financial responsibility (OSFR) for those facilities. The OPA 90 replaced and rescinded the OCSLA OSFR requirements. Executive Order 12777 assigned the OSFR certification function to the Department of the Interior; the Secretary of the Interior, in turn, delegated this function to MMS.

The minimum amount of OSFR that must be demonstrated is $35 million for covered offshore facilities (COF's) located on the OCS and $10 million for COF's located in State waters. A COF is any structure and all of its components, equipment, pipeline, or device (other than a vessel or other than a pipeline or deepwater port licensed under the Deepwater Port Act of 1974) used for exploring for, drilling for, or producing oil or for transporting oil from such facilities. The regulation provides an exemption for persons responsible for facilities having a potential worst-case oil spill of 1,000 bbl or less, unless the risks posed by a facility justify a lower threshold volume.

The Secretary of Transportation has authority for vessel oil-pollution financial responsibility, and the USCG regulates the oil-spill financial responsibility program for vessels. A mobile offshore drilling unit (MODU) is classified as a vessel. However, a well drilled from a MODU is classified as an offshore facility under this rule.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. 9601 *et seq*.), modified by the 1986 Superfund Amendments and Reauthorization Act (SARA) and Section 1006 of OPA 90, requires the promulgation of regulations for the assessment of natural resource damages from oil spills and hazardous substances. These Acts provide for the designation of trustees who determine resource injuries, assess natural resource damages (including the costs of assessing damages), present claims, recover damages, and develop and implement plans for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured natural resources under the trusteeship.

The DOI was given the authority under CERCLA to develop regulations and procedures for the assessment of damages for natural resource injuries resulting from the release of a hazardous substance or oil spills (Natural Resource Damage Assessment (NRDA) Regulations). These rulemakings are all codified at 43 CFR 11. The CERCLA specified two types of procedures to be developed: type "A" procedures for simplified, standard assessments requiring minimal field observations in cases of minor spills or releases in certain environments; and type "B" site-specific procedures for detailed assessments for individual cases.

The Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901 *et seq*.) provides a framework for the safe disposal and management of hazardous and solid wastes. The OCS wastes taken to shore are regulated under RCRA. The USEPA has exempted many oil and gas wastes from coverage under the hazardous wastes regulations of RCRA. Exempt wastes include those generally coming from

an activity directly associated with the drilling, production, or processing of a hydrocarbon product. Therefore, most oil and gas wastes taken onshore are not regulated by the Federal Government but by various Gulf States' programs. If wastes generated on the OCS are not exempt and are hazardous, the wastes must be transported to shore for disposal at a hazardous waste facility. Exempt wastes taken from the Gulf OCS for disposal are regulated in all five Gulf States.

Marine Plastic Pollution Research and Control Act

The Marine Plastic Pollution Research and Control Act of 1987 (MPPRCA) (33 U.S.C. 1901 *et seq*.) implements Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL). Under provisions of the law, all ships and watercraft, including all commercial and recreational fishing vessels, are prohibited from dumping plastics at sea. The law also severely restricts the legality of dumping other vessel-generated garbage and solid-waste items both at sea and in U.S. navigable waters. The USCG is responsible for enforcing the provisions of this law and has developed final rules for its implementation (33 CFR 151, 155, and 158), calling for adequate trash reception facilities at all ports, docks, marinas, and boat-launching facilities.

The Gulf of Mexico has received "Special Area" status under MARPOL, thereby prohibiting the disposal of all solid waste into the marine environment. Fixed and floating platforms, drilling rigs, manned production platforms, and support vessels operating under a Federal oil and gas lease are required to develop waste management plans and to post placards reflecting discharge limitations and restrictions. The MMS regulations explicitly prohibit the disposal of equipment, cables, chains, containers, or other materials into offshore waters. Portable equipment, spools or reels, drums, pallets, and other loose items must be marked in a durable manner with the owner's name prior to use or transport over offshore waters. Smaller objects must be stored in a marked container when not in use.

Final rules published under MPPRCA explicitly state that fixed and floating platforms, drilling rigs, manned production platforms, and support vessels operating under a Federal oil and gas lease are required to develop Waste Management Plans and to post placards reflecting MARPOL dumping restrictions. Waste Management Plans will require oil and gas operators to describe procedures for collecting, processing, storing, and discharging garbage and to designate the person who is in charge of carrying out the plan. These rules also apply to all oceangoing ships of 12 m (39 feet (ft)) or more in length that are documented under the laws of the U.S. or numbered by a State and that are equipped with a galley and berthing. Placards noting discharge limitations and restrictions, as well as penalties for noncompliance, apply to all boats and ships 8 m (26 ft) or more in length. Furthermore, the Shore Protection Act of 1988 (33 U.S.C. 2601 *et seq*.) requires ships transporting garbage and refuse to assure that the garbage and refuse is properly contained on-board so that it will not be lost in the water from inclement wind or weather conditions.

The Magnuson Fishery Conservation and Management Act

The Magnuson Fishery Conservation and Management Act (MFCMA) of 1976 (16 U.S.C. 1251 *et seq*.) established and delineated an area from the States' seaward boundary outward 200 nmi as a fisheries conservation zone for the United States and its possessions. The Act established national standards for fishery conservation and management.

Congress amended and reauthorized the MFCMA through passage of the Sustainable Fisheries Act of 1996. The Act, as amended, established eight Regional Fishery Management Councils (FMC's) to exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring, and revision of fishery management plans (FMP). An FMP is based upon the best available scientific and economic data. The reauthorization also promotes domestic commercial and recreational fishing under sound conservation and management principles, including the promotion and catch and release programs in recreational fishing and encouraging the development of currently underutilized fisheries. The reauthorization requires that the FMC's identify Essential Fish Habitat (EFH). To promote the protection of EFH, Federal agencies are required to consult on activities that may adversely affect EFH designated in the FMP's.

Essential Fish Habitat

There are FMP's in the Gulf region for shrimp, red drum, reef fishes, coastal migratory pelagics, stone crabs, spiny lobsters, coral and coral reefs, billfish, and highly migratory species (HMS). The Gulf of Mexico Fishery Management Council (GMFMC) *Generic Amendment for Addressing Essential Fish Habitat Requirements (1998)* amends the first seven FMP's listed above, identifying estuarine/inshore and marine/offshore EFH for over 450 managed species (about 400 in the Coral FMP). Although not part of the Gulf of Mexico Fishery Management Council's FMP's, separate FMP's have been finalized by NOAA Fisheries for Atlantic tunas, swordfish and sharks, and the Atlantic billfish fishery (USDOC, NMFS, 1999a and b).

The GMFMC *Generic Amendment for Addressing Essential Fish Habitat Requirements* identifies threats to EFH and makes a number of general and specific habitat preservation recommendations for pipelines and oil and gas exploration and production activities within State waters and OCS areas (Chapter 3.2.9.2). The MMS and NOAA Fisheries have entered into consultation agreements for EFH related to OCS activities in the lease areas. The EFH conservation measures recommended by NOAA Fisheries consist primarily of environmental stipulations and other mitigative measures normally required by MMS. Additional conservation provisions and circumstances that require project-specific consultation have been agreed to through a Programmatic Consultation. These agreements, including avoidance distances from topographic-features No Activity Zones and live-bottom pinnacle features appear in Notice to Lessees and Operators (NTL) 2002-G08.

Essential Fish Habitat Consultation

The current programmatic consultation between MMS and NOAA Fisheries for the Central and Western Gulf of Mexico applies to pipeline rights-of-way, plans for exploration and production, and platform removal. The programmatic consultation does not encompass the bidding or granting of leases through lease sales by the MMS, although no impact to EFH is implicit *per se* from holding a lease sale.

This EIS addresses impacting factors that could result from multiple lease sales at a regional, OCS planning area level. The NOAA Fisheries has stated that EFH consultations should be consolidated, where appropriate, within existing environmental review procedures, such as during the NEPA process. Included in this EIS are the components of an EFH Assessment that would be submitted to NOAA Fisheries in request of an EFH consultation. These required components are outlined below, as well as the sections of this EIS where the EFH discussion and other related material can be located.

1. A description of the proposed action

   Chapters 1.1-1.6; Chapters 2.3 and 2.4; and throughout Chapter 3 with specific sections on Fishery Resources and EFH in Chapter 3.2.9.

2. An analysis of the effects, including cumulative effects, of the proposed action on EFH

   Chapter 4.1, *Routine Operations*; Chapter 4.2.1.10, Central Gulf sales impacts; Chapter 4.3.1.8, Western Gulf sales impacts; Chapter 4.4.3.10, impacts from accidental events; and Chapter 4.5.10, cumulative impacts.

3. The MMS's views regarding the effects of the action on EFH

   Summary and conclusion statements are included at the end of each impact discussion outlined under item 2 above. Summaries of impacts also appear in Chapter 2, *Alternatives Including the Proposed Action*.

4. Proposed Mitigations

   Mitigations are presented in Chapter 2.2.2. Mitigating measures include lease stipulations discussed in Chapters 2.3.1.3.1 and 2.3.1.3.2. The programmatic consultation agreement between the MMS and NOAA Fisheries includes "Additional EFH Conservation Recommendations," outlined in Chapter 3.2.9.2.

The NOAA Fisheries' EFH consultation letter and MMS's response appear in Appendix 9.3.

National Fishing Enhancement Act

The National Fishing Enhancement Act of 1984 (33 U.S.C. 2601 *et seq*.), also known as the Artificial Reef Act, establishes broad artificial-reef development standards and a National policy of the United States to encourage the development of artificial reefs that will enhance fishery resources and commercial and recreational fishing. The Secretary of Commerce provided leadership in developing a National Artificial Reef Plan that identifies design, construction, siting, and maintenance criteria for artificial reefs and that provides a synopsis of existing information and future research needs. The Secretary of the Army issues permits to responsible applicants for reef development projects in accordance with the National Plan, as well as regional, State, and local criteria and plans. The law also limits the liability of reef developers complying with permit requirements and includes the availability of all surplus Federal ships for consideration as reef development materials. Although the Act mentions no specific materials other than ships for use in reef development projects, the Secretary of the Interior cooperated with the Secretary of Commerce in developing the National Plan, which identifies oil and gas structures as acceptable materials of opportunity for artificial-reef development. The MMS adopted a Rigs-to-Reefs policy in 1985 in response to this Act and to broaden interest in the use of petroleum platforms as artificial reefs.

Fishermen's Contingency Fund

Final regulations for the implementation of Title IV of the OCSLA, as amended (43 U.S.C. 1841-1846), were published in the *Federal Register* on January 24, 1980 (50 CFR 296). The OCSLA, as amended, established the Fishermen's Contingency Fund (not to exceed $2 million) to compensate commercial fishermen for actual and consequential damages, including loss of profit due to damage or loss of fishing gear by various materials and items associated with oil and gas exploration, development, or production on the OCS. This Fund, administered by the Financial Services Division of NOAA Fisheries, mitigates most losses suffered by commercial fishermen due to OCS oil and gas activities.

As required in the OCSLA, nine area accounts have been established — five in the GOM, one in the Pacific, one in Alaska, and two in the Atlantic. The five Gulf accounts cover the same areas as the five MMS Gulf of Mexico OCS Region Districts. Each area account is initially funded at $100,000 and cannot exceed this amount. The accounts are initiated and maintained by assessing holders of leases, pipeline rights-of-way and easements, and exploration permits. These assessments cannot exceed $5,000 per operator in any calendar year.

The claims eligible for compensation are generally contingent upon the following: (1) damages or losses must be suffered by a commercial fisherman; and (2) any actual or consequential damages, including loss of profit, must be due to damages or losses of fishing gear by items or obstructions related to OCS oil and gas activities. Damages or losses that occur in non-OCS waters may be eligible for compensation if the item(s) causing damages or losses are associated with OCS oil and gas activities.

Ineligible claims for compensation are generally (1) damages or losses caused by items that are attributable to a financially responsible party; (2) damages or losses caused by negligence or fault of the commercial fishermen; (3) occurrences before September 18, 1978; (4) claims of damages to, or losses of, fishing gear exceeding the replacement value of the fishing gear; (5) claims for loss of profits in excess of 6 months, unless supported by records of the claimant's profits during the previous 12 months; (6) claims or any portions of damages or losses claimed that will be compensated by insurance; (7) claims not filed within 60 days of the event of the damages or losses; and (8) damages or losses caused by natural obstructions or obstructions unrelated to OCS oil and gas activities.

There are several requirements for filing claims, including one that a report stating, among other things, the location of the obstruction, must be made within 5 days after the event of the damages or losses; this 5-day report is required to gain presumption of causation. A detailed claim form must be filed within 60 days of the event of the damages or losses. The specifics of this claim are contained in 50 CFR 296. The claimant has the burden of establishing all the facts demonstrating eligibility for compensation, including the identity or nature of the item that caused the damages or losses and its association with OCS oil and gas activity.

Damages or losses are presumed to be caused by items associated with OCS oil and gas activities provided the claimant establishes that (1) the commercial fishing vessel was being used for commercial fishing and was located in an area affected by OCS oil and gas activities; (2) the 5-day report was filed;

(3) there is no record in the most recent Department of Commerce's National Oceanic and Atmospheric Administration/National Ocean Service (NOAA/NOS) nautical charts or weekly USCG Notice to Mariners of an obstruction in the immediate vicinity; and (4) no proper surface marker or lighted buoy marked the obstruction. Damages or losses occurring within a one-quarter-mile radius of obstructions recorded on charts, listed in the Notice to Mariners, or properly marked are presumed to involve the recorded obstruction.

Shipping Safety Fairways, Anchorages, and Traffic Separation Schemes

The Ports and Waterways Safety Act (33 U.S.C. 1223) authorizes the USCG to designate safety fairways, fairway anchorages, and traffic separation schemes (TSS's) to provide unobstructed approaches through oil fields for vessels using Gulf ports. The USCG provides listings of designated fairways, anchorages, and TSS's in 33 CFR 166 and 167, along with special conditions related to oil and gas production in the Gulf of Mexico. In general, no fixed structures, such as platforms, are allowed in fairways. Temporary underwater obstacles such as anchors and attendant cables or chains attached to floating or semisubmersible drilling rigs may be placed in a fairway under certain conditions. Fixed structures may be placed in anchorages, but the number of structures is limited. In addition, the USCG may designate a specific safety zone around an OCS structure.

A TSS is a designated routing measure that is aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes (33 CFR 167.5). The Galveston Bay approach TSS and precautionary areas is the only TSS established in the Gulf of Mexico.

Marine and Estuarine Protection Acts

The Sanctuaries and Reserves Division, National Ocean Service, National Oceanic and Atmospheric Administration of the U.S. Department of Commerce, administers the National Marine Sanctuary and National Estuarine Research Reserve programs. The marine sanctuary program was established by the Marine Protection, Research, and Sanctuaries Act of 1972, and the estuarine research reserve program was established by the Coastal Zone Management Act of 1972.

Marine sanctuaries and estuarine research reserves are designed and managed to meet the following goals, among others:

- enhance resource protection through the implementation of a comprehensive, long-term management plan tailored to the specific resources;
- promote and coordinate research to expand scientific knowledge of sensitive marine resources and improve management decision making;
- enhance public awareness, understanding, and wise use of the marine environment through public interpretive and recreational programs; and
- provide for optimum compatible public and private use of special marine areas.

The Congress declared that ocean dumping in the territorial seas or the contiguous zone of the United States would be regulated under the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRS) (33 U.S.C. 1401 *et seq*.). Under 40 CFR 228, pursuant to Section 103 of the MPRS, sites and times for ocean dumping of dredged and nondredged materials were designated by the USEPA after a determination that such dumping will not unreasonably degrade or endanger human health, welfare, or the marine environment. The EIS's on these disposal sites describe impacts that are expected to occur over a period of 25 years. Under 33 U.S.C. 1413 (33 CFR 324), the Department of the Army, Corps of Engineers, reviews applications for permits to transport dredged and nondredged materials for the purpose of dumping it in ocean waters. On December 31, 1981, 33 U.S.C. 1412a mandated the termination of ocean dumping of sewage sludge and industrial waste.

Marine Protection, Research, and Sanctuaries Act

The Marine Protection, Research, and Sanctuaries Act of 1972 established the National Marine Sanctuary Program, which is administered by the National Oceanic and Atmospheric Administration of the Department of Commerce. A single National Marine Sanctuary (NMS) exists in the northern Gulf of Mexico, specifically in the WPA. The Flower Garden Banks NMS was designated in 1992. The Department of the Interior has taken action to protect the biological resources of the Flower Garden Banks NMS from damage due to oil and gas exploration and development activities. Two blocks (Blocks A-375 and A-398 in High Island Area, East Addition, South Extension), wholly underlain by the Flower Garden Banks, are excluded from leasing. The MMS has also established a "No Activity Zone" around the Flower Garden Banks and has established other operational restrictions as described in the Topographic Features Stipulation. Stetson Bank was added to the Flower Garden Banks NMS in 1996. Stetson Bank is currently protected by a "No Activity Zone."

National Estuarine Research Reserves

Four Estuarine Research Reserves have been established in the Gulf of Mexico: Rookery Bay National Estuarine Research Reserve and Apalachicola National Estuarine Research Reserve in Florida, which are not within the region covered by this multisale EIS; and Weeks Bay National Estuarine Research Reserve in Alabama, and Grand Bay National Estuarine Research Reserve in Mississippi, which are within the area of potential impacts covered within this multisale EIS.

Weeks Bay National Estuarine Research Reserve covers a small estuary of approximately 1,215 ha (3,000 ac) in Baldwin County, Alabama. Weeks Bay is a shallow open bay with an average depth of less than 1.5 m (4.9 ft) and extensive vegetated wetland areas. The bay receives waters from the spring-fed Fish and Magnolia Rivers and connects with Mobile Bay through a narrow opening.

Grand Bay National Estuarine Research Reserve covers about 7,470 ha (18,400 ac) in Jackson County, Mississippi. Located between Pascagoula and the Alabama State line, it contains diverse habitats that support several rare or endangered plants and animals. The reserve's fishery resources include oysters, fish, and shrimp. The area also has recreational resources and archaeological sites.

No other sites in the Gulf of Mexico have been formally proposed as National Estuarine Research Reserves.

The National Estuary Program

In 1987, an amendment to the Clean Water Act, known as the Water Quality Act (P.L. 100-4), established the National Estuary Program (NEP). The purpose of the NEP is to identify nationally important estuaries, to protect and improve their water quality, and to enhance their living resources. Under the NEP, which is administered by the USEPA, comprehensive management plans are generated to protect and enhance environmental resources. The governor of a state may nominate an estuary for the Program and request that a Comprehensive Conservation and Management Plan (CCMP) be developed for an estuary. Representatives from Federal, State, and interstate agencies; academic and scientific institutions; and industry and citizen groups work during a 5-year period to define objectives for protecting the estuary, to select the chief problems to be addressed in the Plan, and to ratify a pollution control and resource management strategy to meet each objective. Strong public support and subsequent political commitments are needed to accomplish the actions called for in the Plan; hence, the 5-year time period to develop the strategies. A total of 22 estuaries have been selected for the Program, 7 of which are in the Gulf: Galveston Bay and Corpus Christi Bay in Texas; the Barataria-Terrebonne Estuarine Complex in Louisiana; Mobile Bay in Alabama; and Sarasota Bay, Charlotte Harbor, and Tampa Bay in Florida.

Executive Order 11990 (May 24, 1977), Protection of Wetlands

Executive Order 11990 establishes that each Federal agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. The Executive Order applies to the following Federal activities: managing and disposing of Federal lands and facilities; providing

federally undertaken, financed, or assisted construction and improvements; and conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Coastal Barrier Resources Act

The Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 *et seq*.) established that undeveloped coastal barriers, per the Act's definition, may be included in a Coastal Barrier Resource System (CBRS).

The CBRA prohibits all new Federal expenditures and financial assistance within the CBRS, with certain specific exceptions, including energy development. The purpose of this legislation was to end the Federal Government's encouragement for development on barrier islands by withholding Federal flood insurance for new construction of or substantial improvements to structures on undeveloped coastal barriers.

The National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 *et seq*.), states that any Federal agency, before approving federally permitted or federally funded undertakings, must take into consideration the effect of that undertaking on any property listed on, or eligible for, the National Register of Historic Places. Implied in this legislation and Executive Order 11593 is that an effort be made to locate such sites before development of an area. Section 101(b)(4) of NEPA states that it is the continuing responsibility of the Federal Government to preserve important historic and cultural aspects of our natural heritage. In addition, Section 11(g)(3) of the OCSLA, as amended, states that "exploration (oil and gas) will not . . . disturb any site, structure, or object of historical or archaeological significance."

The NHPA provides for a National Register of Historic Places to include districts, sites, buildings, structures, and objects noteworthy in American history, architecture, archaeology, and culture. These items may bear National, State, or local significance. The NHPA provides funding for the State Historic Preservation Officer and his staff to conduct surveys and comprehensive preservation planning, establishes standards for State programs, and requires States to establish mechanisms for certifying local governments to participate in the National Register nomination and funding programs.

Section 106 of the Act requires that Federal agencies having direct or indirect jurisdiction over a proposed Federal, federally assisted, or federally licensed undertaking, prior to approval of the expenditure of funds or the issuance of a license, take into account the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to the undertaking. This Council, appointed by the President, has implemented procedures to facilitate compliance with this provision at 36 CFR 800.

Section 110 of the NHPA directs the heads of all Federal agencies to assume responsibility for the preservation of National Register listed or eligible historic properties owned or controlled by their agency as well as those not under agency jurisdiction and control but are potentially affected by agency actions. Federal agencies are directed to locate, inventory, and nominate properties to the National Register, to exercise caution to protect such properties, and to use such properties to the maximum extent feasible. Other major provisions of Section 110 include documentation of properties adversely affected by Federal undertakings, the establishment of trained Federal preservation officers in each agency, and the inclusion of the costs of preservation activities as eligible agency project costs.

A Section 106 review refers to the Federal review process designed to ensure that historic properties are considered during Federal project planning and execution. The review process is administered by the Advisory Council on Historic Preservation, an independent Federal agency, together with the State Historic Preservation Office.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 *et seq*.) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavating from or depositing of dredged material or refuse in such waters, or the accomplishment of any other work affecting the course, location, condition,

or capacity of such waters is unlawful without prior approval from the U.S. Army Corps of Engineers. The legislative authority to prevent inappropriate obstructions to navigation was extended to installations and devices located on the seabed to the seaward limit of the OCS by Section 4(e) of the OCSLA of 1953, as amended.

National Ocean Pollution Planning Act

The National Ocean Pollution Planning Act of 1978 (33 U.S.C. 1701 *et seq*.) calls for the establishment of a comprehensive, coordinated, and effective ocean pollution research, development, and monitoring program. The Act requires that the Department of Commerce, NOAA, in consultation with other agencies, prepare a comprehensive 5-year Federal Plan for Ocean Pollution Research, Development, and Monitoring every three years. The Plan contains major elements that consider an assessment and prioritization of National needs and problems, existing Federal capabilities, policy recommendations, and a budget review.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) (16 U.S.C. 1451 *et seq*.) was enacted by Congress in 1972 to develop a national coastal management program that comprehensively manages and balances competing uses of and impacts to any coastal use or resource. The national coastal management program is implemented by individual State coastal management programs in partnership with the Federal Government. The CZMA Federal consistency regulations require that Federal activities (e.g., OCS lease sales) be consistent to the maximum extent practicable with the enforceable policies of a State's coastal management program. The Federal consistency also requires that other federally approved activities (e.g., activities requiring Federal permits, such as activities described in OCS plans) be consistent with a State's federally approved coastal management program. The Federal consistency requirement is an important mechanism to address coastal effects, to ensure adequate Federal consideration of State coastal management programs, and to avoid conflicts between States and Federal agencies. The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), enacted November 5, 1990, as well as the Coastal Zone Protection Act of 1996 (CZPA), amended and reauthorized the CZMA. The CZMA is administered by the Office of Ocean and Coastal Resource Management (OCRM) within NOAA's National Ocean Service. The CZMA is currently due for reauthorization and legislation is pending before Congress.

Executive Order 12898: Environmental Justice

The environmental justice policy, based on Executive Order 12898 of February 11, 1994, requires agencies to incorporate analysis of the environmental effects of their proposed programs on minorities and low-income populations and communities into NEPA documents. The MMS's existing NEPA process invites participation by all groups and communities in the development of its proposed actions, alternatives, and potential mitigation measures. Scoping and review for the EIS is an open process that provides an opportunity for all participants, including minority and low-income populations, to raise new expressions of concern that can be addressed in the EIS. The effects of the proposed actions on local populations or resources used by local groups including minority and low-income groups are considered in the analyses of socioeconomic conditions, commercial fisheries, air quality, and water quality.

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Executive Order 13186 of January 10, 2001, requires Federal Agencies taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations to develop and implement a Memorandum of Understanding (MOU) with the FWS. The MOU is intended to establish protocols to promote the conservation of migratory bird populations. The MMS has initiated development of such an MOU with FWS.

Occupational Safety and Health Act

The Occupational Safety and Health Act of 1970 (29 U.S.C. 651-678) was enacted to assure, to the extent possible, safe and healthful working conditions and to preserve our human resources. The Act encourages employers and employees to reduce occupational safety and health hazards in their places of employment and stimulates the institution of new programs and the perfection of existing programs for providing safe and healthful working conditions. The Act establishes a National Institute for Occupational Safety and Health, which is authorized to develop and establish occupational safety and health standards. The Act also establishes a National Advisory Committee on Occupational Safety and Health.

The Act empowers the Secretary of Labor or his representative to enter any factory, plant, establishment, workplace, or environment where work is performed by employees and to inspect and investigate during regular working hours and at other reasonable times any such place of employment and all pertinent conditions and equipment therein. If, upon inspection, the Secretary or authorized representative believes that an employer has violated provisions of the Act, the employer shall be issued a citation and given 15 days to contest the citation or proposed assessment of penalty.

1.4. PRELEASE PROCESS

The MMS published the Call for Information (Call) and the Notice of Intent to Prepare the EIS (NOI) for the proposed 2003-2007 Central and Western Gulf Lease Sales in the *Federal Register* on September 12, 2001. In accordance with the Council on Environmental Quality's (CEQ) regulations implementing NEPA, scoping was conducted to solicit comments on the proposed CPA and WPA lease sales and to update the Gulf of Mexico's environmental information base for the Gulf of Mexico. Scoping provides those with an interest in the OCS Program an early opportunity to participate in the events leading to the publication of the Draft EIS. Although the scoping process is formally initiated by the publication of the NOI, scoping efforts and other coordination meetings are ongoing. Formal scoping meetings were held in October 2001 in Galveston, Houston, New Orleans, and Mobile. In addition, the MMS received 10 written comments in response to the NOI. A summary of the scoping meetings and written comments can be found in Chapter 5. Federal, State, and local agencies, along with other interested parties, were requested to send written comments to the MMS on the scope of the EIS, on issues that should be addressed, and on alternatives and mitigating measures that should be considered. The comment period on the Call/NOI closed on October 12, 2001. Additional public notices were distributed via newspapers, mailouts, and the Internet. The MMS received four comments in response to the Call.

The MMS also conducted early coordination with appropriate Federal and State agencies and other MMS Region customers to discuss the proposed CPA and WPA lease sales. Key agencies and organizations included NOAA Fisheries, FWS, the Department of Defense (DOD), USCG, USEPA, State Governors' offices, and industry groups.

The Area ID decision for the CPA and WPA leases sales scheduled under the proposed 5-Year Program was made January 16, 2002. The Area ID describes the geographical areas of the proposed actions and any alternatives to the proposed actions, as well as the mitigative measures and issues to be analyzed in the NEPA documents prepared for the proposed actions.

The publication of the Draft EIS initiated a 60-day public review and comment period. A Notice of Availability was published in the *Federal Register*. Additionally, a public notice was mailed out and placed on the MMS website. Copies of the Draft EIS were sent to Federal, State, and local agencies; libraries; industry; special interest groups; and private individuals. Formal public hearings on the Draft EIS and the proposed actions were held in the affected coastal States during the comment period. Written or electronic comments were accepted until the close of the comment period on May 31, 2002. Summaries or copies of the comments and responses are included in Chapter 5.

The Proposed Notice of Sale for Central Gulf Sale 185 and the Final EIS will be published at about the same time. The publication of the Final EIS initiates a 30-day comment period. After the end of the comment period, the Department of the Interior reviews the Final EIS and all comments received on both the Draft and Final EIS's. The Assistant Secretary of the Interior for Land and Minerals (ASLM) then decides which of the proposed alternatives will be implemented.

Concurrent with the preparation of the Final EIS, a consistency review and subsequent Consistency Determination (CD) is done. For presale consistency determinations, MMS reviews each affected State's coastal zone management program, analyzes the potential impacts to the coastal zone management program, and makes an assessment of consistency with the enforceable policies of each State's program. If a State disagrees with MMS's CD, the State is required to do the following under the CZMA: (1) indicate how the MMS presale proposal is inconsistent with their coastal program; (2) suggest alternative measures to bring the MMS proposal into consistency with their coastal program; or (3) describe the need for additional information that would allow a determination of consistency. Unlike the consistency process for specific OCS plans and permits, there is no procedure for administrative appeal to the Secretary of Commerce for Federal agency consistency determinations for presale activities. Either MMS or the State may request mediation. Mediation is voluntary and the Department of Commerce would serve as the mediator. Whether there is mediation or not, the final consistency determination is made by the Department of the Interior and is the final administrative action for the presale consistency process.

A Final Notice of Sale is published in the *Federal Register* at least 30 days prior to the scheduled lease sale. The Final Notice identifies the specific configuration of the proposed sale as decided upon by the ASLM.

Lease sale stipulations are considered to be a normal part of the OCS operating regime in the Gulf of Mexico. Compliance with lease stipulations is mandatory; application of a stipulation(s) is a condition of the lease.

1.5. POSTLEASE ACTIVITIES

The MMS is responsible for managing, regulating, and monitoring oil and natural gas exploration, development, and production operations on the Federal OCS to promote orderly development of mineral resources and to prevent harm or damage to, or waste of, any natural resource, any life or property, or the marine, coastal, or human environment. Regulations for oil, gas, and sulphur lease operations are specified in 30 CFR 250, 30 CFR 251, and 30 CFR 254.

Measures to mitigate potential impacts are an integral part of the OCS Program. These measures are implemented through lease stipulations, operating regulations, NTL's, and project-specific requirements or approval conditions. Mitigating measures address concerns such as endangered and threatened species, geologic and manmade hazards, military warning and ordnance disposal areas, air quality, oil-spill response planning, chemosynthetic communities, operations in H_2S-prone areas, and shunting of drill effluents in the vicinity of biologically sensitive features. Standard mitigation measures in the Gulf of Mexico OCS include

- limiting the size of explosive charges used for structure removals;
- requiring placement explosive charges at least 15 ft below the mudline;
- requiring site-clearance procedures to eliminate potential snags to commercial fishing nets;
- establishment of No Activity and Modified Activity Zones around high-relief live bottoms;
- requiring remote-sensing surveys to detect and avoid biologically sensitive areas such as low-relief live bottoms, pinnacles, and chemosynthetic communities; and
- requiring coordination with the military to prevent multiuse conflicts between OCS and military activities.

The MMS issues Notices to Lessees and Operators (NTL's) to provide clarification, description, or interpretation of a regulation; guidelines on the implementation of a special lease stipulation or regional requirement; or transmit administrative information. A detailed listing of current Gulf of Mexico OCS Region NTL's is available through the MMS, Gulf of Mexico OCS Region's Internet Homepage at http://www.gomr.mms.gov or through the Region's Public Information Office at (504) 736-2519 or 1-800-200-GULF.

Conditions of approval are mechanisms to control or mitigate potential safety or environmental problems associated with proposed operations. Conditions of approval are based on MMS technical and environmental evaluations of the proposed operations. Comments from Federal and State agencies (as applicable) are also considered in establishing conditions. Conditions may be applied to any OCS plan, permit, right-of-use of easement, or pipeline right-of-way grant.

Some MMS-identified mitigation measures are implemented through cooperative agreements or efforts with the oil and gas industry and Federal and State agencies. These measures include the NOAA Fisheries Observer Program to protect marine mammals and sea turtles when OCS structures are removed using explosives, minimum helicopter altitudes to prevent disturbance of wildlife, labeling of operational supplies to track sources of accidental debris loss, development of methods of pipeline landfall to eliminate impacts to barrier beaches, and semiannual beach cleanup events.

Geological and Geophysical Activities

A geological and geophysical (G&G) permit must be obtained from MMS prior to conducting geological or geophysical exploration or scientific research on unleased OCS lands or on lands under lease to a third party (30 CFR 251). Geological investigations include various seafloor sampling techniques to determine the geochemical, geotechnical, or engineering properties of the sediments.

Seismic surveys are performed to obtain information on surface and near-surface geology and on subsurface geologic formations. Low-energy, high-resolution seismic surveys collect data on surficial geology used to identify potential shallow geologic or manmade hazards (e.g., faults or pipelines) for engineering and site planning for bottom-founded structures. The high-resolution surveys are also used to identify environmental and archaeological resources such as low-relief live-bottom areas, pinnacles, chemosynthetic community habitat, and shipwrecks. High-energy, deep-penetration, common-depth-point (CDP) seismic surveys obtain data about geologic formations thousands of feet below the seafloor. The two-dimensional (2D) and three-dimensional (3D) CDP data are used to map structure features of stratigraphically important horizons in order to identify potential hydrocarbon traps. They can also be used to map the extent of potential habitat for chemosynthetic communities.

The MMS has nearly completed a programmatic EA on Geological and Geophysical Exploration for Mineral Resources on the Gulf of Mexico Outer Continental Shelf (USDOI, MMS, in preparation). Upon receiving a complete G&G permit application, MMS prepares a Categorical Exclusion Review (CER), an environmental assessment (EA), or an EIS in accordance with NEPA and other applicable MMS policies and guidelines. When required under an approved coastal zone management program, proposed G&G permit activities must receive State concurrence prior to MMS permit approval.

Exploration and Development Plans

To ensure conformance with the OCSLA, other laws, applicable regulations, and lease provisions, and to enable MMS to carry out its functions and responsibilities, formal plans (30 CFR 250.203 and 250.204) with supporting information must be submitted for review and approval by MMS before an operator may begin exploration, development, or production activities on any lease. Supporting environmental information, archaeological reports, biological reports (monitoring and/or live-bottom survey), and other environmental data determined necessary must be submitted with an OCS plan. This information provides the basis for an analysis of both offshore and onshore impacts that may occur as a result of the activities. The MMS may require additional specific supporting information to aid in the evaluation of the potential environmental impacts of the proposed activities. The MMS can require amendment of an OCS plan based on inadequate or inaccurate supporting information.

The OCS plans are reviewed by geologists, geophysicists, engineers, biologists, archaeologists, air quality specialists, oil-spill specialists, and technicians. The plans and accompanying information are evaluated to determine whether any seafloor or drilling hazards are present; that air and water quality issues are addressed; that plans for hydrocarbon resource conservation, development, and drainage are adequate; that environmental issues and potential impacts are properly evaluated and mitigated; and that the proposed action is in compliance with NEPA, MMS operating regulations, and other requirements. Federal agencies, including FWS, NOAA Fisheries, USEPA, the U.S. Navy, the U.S. Air Force, and the USCG, may be consulted if the proposal has the potential to impact areas under their jurisdiction. Each Gulf Coast State has a designated CZM agency that take part in the review process. The OCS plans are

also made available to the general public for comment through the MMS, Gulf of Mexico OCS Region's Public Information Office.

In response to increasing deepwater activities in the Gulf, MMS developed a comprehensive strategy to address NEPA compliance and environmental issues in the deepwater areas. A key component of that strategy was the completion of a programmatic EA to evaluate the potential effects of the deepwater technologies and operations (USDOI, MMS, 2000a). As a supplement to the EA, MMS prepared a series of technical papers that provide a summary description of the different types of structures that may be employed in the development and production of hydrocarbon resources in the deepwater areas of the Gulf of Mexico (Regg et al., 2000). Subsequent to the EA, MMS developed a biologically based grid system to ensure systematic analysis of the deepwater region. The grid system divides the deepwater area of the WPA and CPA into 17 areas of biological similarity. A programmatic or "grid" EA will be prepared for at least one OCS development plan within each of the 17 grids. The grid EA will be comprehensive in terms of the potential impacting factors and the environmental and socioeconomic resources described and analyzed. Future environmental evaluations will use much of the information in the grid EA – tiering (40 CFR 1502.20) from the grid EA and incorporating by reference appropriate sections. This approach will allow subsequent analyses to focus on specific issues and effects related to specific proposals.

On the basis of the MMS reviews of the OCS plan; the findings of the proposal-specific CER, EA, or EIS or the grid EA; and other applicable MMS studies and NEPA documents, the OCS plan is approved or disapproved by MMS, or modification of the plan is required. Although very few OCS plans are ultimately disapproved, many must be amended prior to approval to fully comply with MMS operating regulations and requirements, to address reviewing agencies' concerns, or to avoid potential hazards or impacts to environmental resources.

Exploration Plans

An exploration plan (EP) must be submitted to MMS for review and decision before any exploration activities, except for preliminary activities, can begin on a lease. The EP describes exploration activities, drilling rig or vessel, proposed drilling and well-testing operations, environmental monitoring plans, and other relevant information, and includes a proposed schedule of the exploration activities. Guidelines and environmental information requirements for lessees and operators submitting an EP are addressed in 30 CFR 250.203 and further explained in NTL 2000-G10.

After receiving an EP, MMS performs technical and environmental reviews. The MMS evaluates the proposed exploration activities for potential impacts relative to geohazards and manmade hazards (including existing pipelines), archaeological resources, endangered species, sensitive biological features, water and air quality, oil-spill response, and other uses (e.g., military operations) of the OCS. The EP is reviewed for compliance with all applicable laws and regulations.

A CER, EA, and/or EIS is prepared in support of the NEPA environmental review of the EP. The CER, EA, and/or EIS is based on available information, which may include the geophysical report (for determining the potential for the presence of deepwater benthic communities); archaeological report; air emissions data; live-bottom survey and report; biological monitoring plan; and recommendations by the affected State(s), DOD, FWS (for selected plans under provisions of a DOI agreement), NOAA Fisheries, and/or internal MMS offices. As part of the review process, most EP's and supporting environmental information are sent to the affected State(s) for consistency certification review and determination under the States' approved CZM programs.

After EP approval and prior to conducting drilling operations, the operator is required to submit and obtain approval for an Application for Permit to Drill (APD) (see *Wells* under *Permits and Applications* below).

Deepwater Operations Plans

In 1992, MMS formed an internal Deepwater Task Force to address technical issues and regulatory concerns relating to deepwater (greater than 1,000 ft or 305 m) operations and projects utilizing subsea technology. Based on the Deepwater Task Force's recommendation, an NTL (NTL 96-4N, superseded by NTL 98-8N effective June 1, 1998) was developed, which required operators to submit a Deepwater Operations Plan (DWOP) for all operations in deepwater and all projects using subsea technology. DeepStar, an industry-wide cooperative workgroup focused on deepwater regulatory issues and critical

technology development issues, worked closely with the MMS Deepwater Task Force to develop the initial guidelines for the DWOP. The DWOP was established to address regulatory issues and concerns that were not addressed in the existing MMS regulatory framework and is intended to initiate an early dialogue between MMS and industry before major capital expenditures on deepwater and subsea projects are committed. Deepwater technology has been evolving faster than the MMS's ability to revise OCS regulations; the DWOP was established through the NTL process, which provides for a more timely and flexible approach to keep pace with the expanding deepwater operations and subsea technology. The DWOP requirements are being incorporated into MMS operating regulations via the proposed rulemaking for revisions to 30 CFR 250 Subpart B.

The DWOP is intended to address the different functional requirements of production equipment in deep water, particularly the technological requirements associated with subsea production systems, and the complexity of deepwater production facilities. The DWOP provides MMS with information specific to deepwater equipment issues to demonstrate that a deepwater project is being developed in an acceptable manner as mandated in the OCS Lands Act, as amended, and the MMS operating regulations at 30 CFR 250. The MMS reviews deepwater development activities from a total system perspective, emphasizing operational safety, environmental protection, and conservation of natural resources. The DWOP process is a phased approach that parallels the operator's state of knowledge about how a field will be developed. A DWOP outlines the design, fabrication, and installation of the proposed development/production system and its components. A DWOP will include structural aspects of the facility (fixed, floating, subsea); stationkeeping (includes mooring system); wellbore, completion, and riser systems; safety systems; offtake; and hazards and operability of the production system. The DWOP provides the MMS with the information to determine that the operator has designed and built sufficient safeguards into the production system to prevent the occurrence of significant safety or environmental incidents. The DWOP, in conjunction with other permit applications, provides MMS the opportunity to assure that the production system is suitable for the conditions in which it will operate.

The MMS recently completed a review of several industry-developed, recommended practices that address the mooring and risers for floating production facilities. The recommended practices address such things as riser design, mooring system design (stationkeeping), and hazard analysis. The MMS is in the process of incorporating these recommended practices into the existing regulations. Hazard analyses allow MMS to be assured that the operator has anticipated emergencies and is prepared to address such, either through their design or through the operation of the equipment in question.

Conservation Reviews

One of MMS's primary responsibilities is to ensure development of economically producible reservoirs according to sound conservation, engineering, and economic practices. The MMS has established requirements for the submission of conservation information (NTL 2000-N05) for production activities. Conservation reviews are performed to ensure that economic reserves are fully developed and produced.

Development Operations and Coordination Documents

Development Operations Coordination Documents (DOCD's) must be submitted to MMS for review and decision before any development operations can begin on a lease in the CPA or WPA. The DOCD's describe the proposed development activities, drilling activities, platforms or other facilities, proposed production operations, environmental monitoring plans, and other relevant information, and include a proposed schedule of development and production activities. Requirements for lessees and operators submitting a DOCD are addressed in 30 CFR 250.204, and information guidelines for DOCD's are given in NTL 2000-G10, dated April 27, 2000.

After receiving a DOCD, MMS performs technical and environmental reviews. The MMS evaluates the proposed activity for potential impacts relative to geohazards and manmade hazards (including existing pipelines), archaeological resources, endangered species, sensitive biological features, water and air quality, oil-spill response, and other uses (e.g., military operations) of the OCS. The DOCD is reviewed for compliance with all applicable laws and regulations.

A CER, EA, and/or EIS is prepared in support of the NEPA environmental review of a DOCD. The CER, EA, and/or EIS is based on available information, which may include the geophysical report (for

determining the potential for the presence of deepwater benthic communities); archaeological report; air emissions data; live-bottom survey and report; biological monitoring plan; and recommendations by the affected State(s), DOD, FWS (for selected plans under provisions of a DOI agreement), NOAA Fisheries, and/or internal MMS offices.

As part of the review process, the DOCD and supporting environmental information may be sent to the affected State(s) for consistency certification review and determination under the States' approved CZM programs. The OCSLA (43 U.S.C. 1345(a) through (d) and 43 U.S.C. 1351(a)(3)) provides for this coordination and consultation with the affected State and local governments concerning a DOCD.

Alternative Compliance and Departures

The MMS project-specific engineering safety review ensures that the equipment proposed for use is designed to withstand the operational and environmental condition in which it will operate. When an OCS operator proposes the use of technology or procedures not specifically addressed in established MMS regulations, the operations are evaluated for alternative compliance or departure approval. Any new technologies or equipment that represent an alternative compliance or departure from existing MMS regulation must be fully described and justified before such will be approved for use. For MMS to grant alternative compliance or departure approval, the operator must demonstrate an equivalent or improved degree of protection as specified in 30 CFR 250.103(a). Comparative analysis with other approved systems, equipment, and procedures is one tool that MMS uses to assess the adequacy of protection provided by alternative technology or operations. Actual operational experience is necessary with alternative compliance measures before MMS will consider them as proven technology. A departure from established requirements may also be approved by MMS, when necessary, for the proper control of a well, the facilitation of the proper development of a lease, the conservation of natural resources, or the protection of life, property, or the marine, coastal, or human environment as specified in 30 CFR 250.103(b).

New and Unusual Technologies

New and unusual technologies are identified through the EP, DWOP, or DOCD review processes. Some of these technologies are extended applications of existing technologies and interface with the environment in essentially the same way as the "old technologies." These technologies provide an equal or greater level of performance (safety and environmental protection). Such technologies are reviewed for alternative compliance or departures and do not trigger additional environmental review. Some recent examples of new technologies that do not affect the environment differently are synthetic mooring lines, subsurface safety devices, and multiplex subsea controls.

New or unusual technology means equipment and/or procedures that (1) function in a manner that potentially causes different impacts to the environment than the equipment or procedures did in the past; (2) have not been used previously or extensively in an MMS OCS Region; (3) have not been used previously under the anticipated operating conditions; or (4) have operating characteristics that are outside the performance parameters established under 30 CFR 250 Subpart B. Some new technologies differ in how they function or interface with the environment. These include equipment or procedures that have not been previously used in the Gulf OCS and so have not been assessed by MMS through technical and environmental reviews; some are new equipment and systems that have never been installed on the OCS. New technologies may be outside the framework established by MMS regulations and, thus, their performance (safety, environmental protection, efficiency, etc.) has not been addressed by MMS. The degree to which these new technologies interface with the environment and the potential impacts that may result are considered in determining the level of NEPA review that will be initiated.

Technologies continue to evolve to meet the technical, environmental, and economic challenges of deepwater development. The MMS prepared a programmatic EA to evaluate the potential effects of the deepwater technologies and operations (USDOI, MMS, 2000a). As a supplement to the EA, MMS prepared a series of technical papers that provides a summary description of the different types of structures that may be employed in the development and production of hydrocarbon resources in the deepwater areas of the Gulf of Mexico (Regg et al., 2000). The descriptions and analyses of the EA and technical papers have been used in the preparation of this EIS and are incorporated here by reference.

A recent example of new technology is the proposed use of floating, production, storage, and offloading (FPSO) systems in the Gulf of Mexico. An EIS was completed to evaluate the potential environmental impacts of the use of FPSO's in the Gulf; the final EIS was published in January 2001 (USDOI, MMS, 2001a) and the Record of Decision was made on December 31, 2001. The descriptions and analyses of the FPSO EIS have been used in the preparation of this EIS and are incorporated here by reference. The MMS also funded a comparative risk analysis to understand the potential risks associated with FPSO's (Gilbert et al., 2001).

Emergency Plans

Criteria, models, and procedures for shutdown operations and the orderly evacuation for a pending hurricane have been in place in the Gulf of Mexico OCS for more than 30 years. Operating experience from extensive drilling activities and more than 4,000 platforms during the 30-plus years of the Gulf OCS Program have demonstrated the effectiveness and safety of securing wells and evacuating a facility in advance of severe weather conditions. Preinstallation efforts, historical experience with similar systems, testing, and the actual operating experience (under normal conditions and in response to emergency situations) is to formulate the exact time needed to secure the wells/production facility and to abandon as necessary. Operators will develop site-specific curtailment/securing/evacuation plans that will vary in complexity and formality by operator and type of activity. In general terms, all plans are intended to make sure the facility (or well) is secured in advance of a pending storm or developing emergency. The operating procedures developed during the engineering, design, and manufacturing phases of the project, coupled with the results (recommended actions) from hazard analyses performed, will be used to develop the emergency action/curtailment plans. Evacuation and production curtailment must consider a combination of factors, including the well status (drilling, producing, etc.), and the type and mechanics of wellbore operations. These factors are analyzed onsite through a decisionmaking process that involves onsite facility managers. The emphasis is on making real-time, situation-specific decisions and forecasting based on available information. Details of the shut-in criteria and various alerts are addressed on a case-by-case basis.

Plans for shutting in production from the subsea wells are addressed as part of the emergency curtailment plan. The plan specifies the various alerts and shutdown criteria linked to both weather and facility performance data, with the intent to have operations suspended and the wells secured in the event of a hurricane or emergency situation. Ensuring adequate time to safely and efficiently suspend operations and secure the well is a key component of the planning effort. Clearly defined responsibilities for the facility personnel are part of the successful implementation of the emergency response effort.

For a severe weather event such as a hurricane, emergency curtailment plans would address the criteria and structured procedures for suspending operations and ultimately securing the wellbore(s) prior to weather conditions that could exceed the design operating limitations of the drilling or production unit. For drilling operations, the plan might also address procedures for disconnecting and moving the drilling unit off location after the well has been secured, should the environmental conditions exceed the floating drilling unit's capability to maintain station. Curtailment of operations consists of various stages of "alerts" indicating the deterioration of meteorological, oceanographic, or wellbore conditions. Higher alert levels require increased monitoring, the curtailment of lengthy wellbore operations, and, if conditions warrant, the eventual securing of the well. If conditions improve, operations could resume based on the limitations established in the contingency plan for the known environmental conditions. The same emergency curtailment plans would be implemented in an anticipated or impending emergency situation, such as the threat of terrorist attack.

Neither the MMS nor the Coast Guard mandates that an operator must evacuate a production facility for a hurricane; it is a decision that rests solely with the operator. The Coast Guard does require the submittal of an emergency evacuation plan that addresses the operator's intentions for evacuation of nonessential personnel, egress routes on the production facility, lifesaving and personnel safety devices, firefighting equipment, etc. As activities move farther from shore, it may become safer to not evacuate the facility because helicopter operations become inherently more risky with greater flight times. Severe weather conditions also increase the risks associated with helicopter operations. The precedent for leaving a facility manned during severe weather is established in North Sea and other operating basins.

Redundant, fail-safe, automatic shut-in systems located inside the well bore and at the sea surface, and in some instances also at the seafloor, are designed to prevent or minimize pollution. These systems

are designed and tested to ensure proper operation should a production facility or well be catastrophically damaged. Testing occurs at regular intervals with predetermined performance limits designed to ensure functioning of the systems in the event of an emergency.

Permits and Applications

After EP or DOCD approval, the operator submits applications for specific activities to MMS for approval. These applications include those for drilling wells; well-test flaring; temporary well abandonment; installing a well protection structure, production platforms, satellite structures, subsea wellheads and manifolds, and pipelines; installation of production facilities; commencing production operations; platform removal and lease abandonment; and pipeline abandonment.

Wells

The MMS requirements for the drilling of wells can be found at 30 CFR 250 Subpart D. Lessees are required to take precautions to keep all wells under control at all times. The lessee must use the best available and safest technology to enhance the evaluation of abnormal pressure conditions and to minimize the potential for uncontrolled well flow.

Prior to conducting drilling operations, the operator is required to submit and obtain approval for an Application for Permit to Drill (APD). The APD requires detailed information — including project layout at a scale of 24,000:1, design criteria for well control and casing, specifications for blowout preventors, a mud program, cementing program, direction drilling plans, etc. — to allow evaluation of operational safety and pollution-prevention measures. The APD is reviewed for conformance with the engineering requirements and other technical considerations.

The MMS is responsible for conducting technical and safety reviews of all drilling, workover, and production operations on the OCS. These detailed analyses determine if the lessee's proposed operation is in compliance with all regulations and all current health, safety, environmental, and classical engineering standards. Compliance includes requirements for state-of-the-art drilling technology, production safety systems, completion of oil and gas wells, oil-spill contingency plans, pollution-control equipment, hydrogen sulfide contingency plans, and specifications for platform/structure designs. These safety, technical, and engineering reviews involve risk assessment and a thorough analysis of the hazards involved. Safety systems used for drilling, workover, and production operations on the OCS must be designed, installed, used, maintained, and tested in a manner to assure the safety and protection of the human, marine, and coastal environments. Specific requirements for sundry notices for well workovers, completions, and abandonments are detailed in 30 CFR 250 Subparts E, F, and G, respectively.

The MMS regulations at 30 CFR 250.702 address the requirements for permanent abandonment of a well on the OCS. A permanent abandonment includes the isolation of zones in the open wellbore, plugging of perforated intervals, plugging the annular space between casings (if they are open), setting a surface plug, and cutting and retrieving the casing at least 15 ft below the mudline. All plugs must be tested in accordance with the regulations. There are no routine surveys of permanently abandoned well locations. If a well is found to be leaking, MMS would require the operator of record to perform an intervention to repair the abandonment. If a well is temporarily abandoned at the seafloor, an operator must provide MMS with an annual report summarizing plans to permanently abandon the well or to bring the well into production. Part of the annual report for a temporarily abandoned well is a survey of the well location to ensure the temporary abandonment is intact and adequately restricting any reservoir fluids from migrating out of the well. All equipment such as well heads, production trees, casing, manifolds, etc., must be designed to withstand the pressures of the deepwater areas. These designs are verified by MMS through multiple levels of engineering safety reviews prior to the equipment being placed into service.

Platforms and Structures

The MMS does a technical and safety review of all proposed structure designs and installation procedures. All proposed facilities are reviewed for structural integrity. These detailed classical engineering reviews entail an intense evaluation of all operator proposals for fabrication, installation, modification, and repair of all mobile and fixed structures. The lessee must design, fabricate, install, use,

inspect, and maintain all platforms and structures on the OCS to assure their structural integrity for the safe conduct of operations at specific locations. Applications for platform and structure approval are filed in accordance with 30 CFR 250.901. Design requirements are presented in detail at 30 CFR 250.904 through 250.909. The lessee evaluates characteristic environmental conditions associated with operational functions to be performed. Factors such as waves, wind, currents, tides, temperature, and the potential for marine growth on the structure are considered. In addition, pursuant to 30 CFR 250.902 and 250.903, a program has been established by MMS to assure that new structures meeting the conditions listed under 30 CFR 250.900(c) are designed, fabricated, and installed using standardized procedures to prevent structural failures. This program facilitates review of such structures and uses third-party expertise and technical input in the verification process through the use of a Certified Verification Agent. After installation, platforms and structures are required to be periodically inspected and maintained under 30 CFR 250.912.

Pipelines

Regulatory processes and jurisdictional authority concerning pipelines on the OCS and in coastal areas are shared by several Federal agencies, including DOI, DOT, COE, the Federal Energy Regulatory Commission (FERC), and the USCG. Aside from pipeline regulations, these agencies have the responsibility of overseeing and regulating the following areas: the placement of structures on the OCS and pipelines in areas that affect navigation; the certification of proposed projects involving the transportation or sale of interstate natural gas, including OCS gas; and the right of eminent domain exercised by pipeline companies. In addition, DOT is responsible for promulgating and enforcing safety regulations for the transportation in or affecting interstate commerce of natural gas, liquefied natural gas (LNG), and hazardous liquids by pipeline. This includes all offshore pipelines on State lands beneath navigable waters and on the OCS. The regulations are contained in 49 CFR 191 through 193 and 195. In a Memorandum of Understanding (MOU) between DOT and DOI dated December 10, 1996, each party's respective regulatory responsibilities are outlined. The DOT is responsible for establishing and enforcing design, construction, operation, and maintenance regulations, and for investigating accidents for all OCS transportation pipelines beginning downstream of the point at which operating responsibility transfers from a producing operator to a transporting operator. The DOI's responsibility extends upstream from the transfer point described above.

The MMS is responsible for regulatory oversight of the design, installation, and maintenance of OCS oil and gas pipelines. The MMS operating regulations for pipelines found at 30 CFR 250 Subpart J are intended to provide safe and pollution-free transportation of fluids in a manner that does not unduly interfere with other users of the OCS. Pipeline applications are usually submitted and reviewed separately from development and production plans. Pipeline applications may be for on-lease pipelines or right-of-way for pipelines that cross other lessees' leases or unleased areas of the OCS. Pipeline permit applications to MMS include the pipeline location drawing, profile drawing, safety schematic drawing, pipe design data to scale, a shallow hazard survey report, and an archaeological report.

The DOI has regulatory responsibility for all producer-operated pipelines that cross directly into State waters without first connecting to a transportation operator's common-carrier pipeline on the OCS. The DOI's responsibility extends downstream from the first production well to the last valve and associated safety equipment on the last OCS-related production system along the pipeline. The DOT's regulatory responsibility extends shoreward from the last valve on the last OCS-related production facility.

The MMS evaluates the design, fabrication, installation, and maintenance of pipelines. Proposed pipeline routes are evaluated for potential seafloor or subsea geologic hazards and other natural or manmade seafloor or subsurface features or conditions (including other pipelines) that could have an adverse impact on the pipeline or that could be adversely impacted by the proposed operations. Routes are also evaluated for potential impacts on archaeological resources and biological communities. A CER, EA, and/or EIS is prepared in accordance with applicable policies and guidelines. The MMS prepares an EA and/or an EIS on all pipeline rights-of-way that go ashore. The FWS reviews and provides comments on applications for pipelines that are near certain sensitive biological communities. No pipeline route will be approved by MMS if any bottom-disturbing activities (from the pipeline itself or from the anchors of lay barges and support vessels) encroach on any biologically sensitive areas.

The design of the proposed pipeline is evaluated for appropriate cathodic protection system to protect the pipeline from leaks resulting from the effects of external corrosion of the pipe; external pipeline

coating system to prolong the service life of the pipeline; measures to protect the inside of the pipeline from the detrimental effects, if any, of the fluids being transported; the submersibility of the line (i.e., that the pipeline will remain in place on the seafloor and not have the potential to float, even if empty or filled with gas rather than liquids); proposed operating pressure of the line, and protection of other pipelines crossing the proposed route. Such an evaluation includes reviewing the calculations used by the applicant in order to determine whether the applicant properly considered such elements as the grade of pipe to be used, the wall thickness of the pipe, derating factors related to the submerged and riser portions of the pipeline, the pressure rating of any valves or flanges to be installed in the pipeline, the pressure rating of any other pipeline(s) into which the proposed line might be tied, the required pressure to which the line must be tested before it is placed in service; protective devices such as pressure sensors and remotely operated valves, the physical arrangement of those devices proposed to be installed by the applicant for the purposes of protecting the pipeline from possible overpressure conditions and for detecting and initiating a response to abnormally low-pressure conditions; and the applicant's planned compliance with regulations requiring that pipelines greater than 8 5/8 inches in diameter and installed in water depths less than 200 ft shall be buried to a depth of at least 3 ft (30 CFR 250.1003). In addition, pipelines crossing fairways require a COE permit and must be buried to a depth of at least 10 ft.

Operators are required to periodically inspect pipeline routes. Monthly overflights are conducted to inspect pipeline routes for leakage.

Applications for pipeline abandonment must also be submitted for MMS review and approval. Abandonment applications are evaluated to ensure they will render the pipeline inert and/or to minimize the potential for the pipeline becoming a source of pollution by flushing and plugging it; and minimize the likelihood that the abandoned line will become an obstruction to other users of the OCS by filling it and burying the ends.

Inspection and Enforcement

The OCSLA authorizes and requires MMS to provide for both an annual scheduled inspection and a periodic unscheduled (unannounced) inspection of all oil and gas operations on the OCS. The inspections are to assure compliance with all regulatory constraints that allowed commencement of the operation.

The primary objective of an initial inspection is to assure proper installation of mobile drilling units and fixed structures, and proper functionality of their safety and pollution prevention equipment. After operations begin, additional announced and unannounced inspections are conducted. Unannounced inspections are conducted to foster a climate of safe operations, to maintain an MMS presence, and to focus on operators with a poor performance record. These inspections are also conducted after a critical safety feature has previously been found defective. Poor performance generally means that more frequent unannounced inspections may be conducted on a violator's operation.

The annual inspection examines all safety equipment designed to prevent blowouts, fires, spills, or other major accidents. These annual inspections involve the inspection for installation and performance of all platform safety system components.

The inspectors follow the guidelines as established by the regulations, API RP 14C, and the specific MMS-approved plan. The MMS inspectors perform these inspections using a national checklist called the Potential Incident of Noncompliance (PINC) list. This list is a compilation of yes/no questions derived from all regulated safety and environmental requirements. Information PINC's can be found at http://www.mms.gov/regcompliance/inspect.htm.

The MMS administers an active civil penalties program (30 CFR 250, Subpart N). A civil penalty in the form of substantial monetary fines may be issued against any operator that commits a violation that may constitute a threat of serious, irreparable, or immediate harm or damage to life, property, or the environment. The MMS may make recommendations for criminal penalties if a willful violation occurs. In addition, the regulation at 30 CFR 250.173(a) authorizes suspension of any operation in the GOM Region if the lessee has failed to comply with a provision of any applicable law, regulation, or order or provision of a lease or permit. Furthermore, the Secretary may invoke his authority under 30 CFR 250.185(c) and cancel a lease.

Pollution Prevention, Oil-Spill Response Plans, and Financial Responsibility

Pollution prevention is addressed through proper design and requirements for safety devices to prevent continued flow from a well should a rupture in one of the pipelines or risers occur. Redundancy is provided for critical safety devices that will shut off flow from the well if, for example, a riser were to rupture. Wells, particularly subsea wells, include a number of sensors that help in detecting pressures and the potential for leaks in the production system. Safety devices are monitored and tested frequently to ensure their operation should an incident occur. Barriers are monitored to provide early warning of potential for loss containment. Contingency plans for dealing with a spill are addressed as part of the project-specific OCS development plan, which also requires MMS review and approval before development begins.

The MMS has regulations (30 CFR 250.300) to ensure that lessees do not create conditions that will pose an unreasonable risk to public health, life, property, aquatic life, wildlife, recreation, navigation, commercial fishing, or other uses of the ocean during offshore oil and gas operations. Control and removal of pollution is the responsibility and at the expense of the lessee. Operators are required to install curbs, gutters, drip pans, and drains on platform and rig deck areas in a manner necessary to collect all contaminants and debris not authorized for discharge. The rules also explicitly prohibit the disposal of equipment, cables, chains, containers, or other materials into offshore waters. Portable equipment, spools or reels, drums, pallets, and other loose items must be marked in a durable manner with the owner's name prior to use or transport over offshore waters. Smaller objects must be stored in a marked container when not in use. Operational discharges such as produced water and drilling muds and cuttings are regulated by the USEPA through the NPDES program. The MMS may restrict the rate of drilling fluid discharge or prescribe alternative discharge methods.

To ensure that safety devices are operating properly, MMS incorporates the American Petroleum Institute (API) Recommended Practice (RP) 14C into the operating regulations. API RP 14C incorporates the knowledge and experience of the oil and gas industry regarding the analysis, design, installation, and testing of the safety devices used to prevent pollution. API RP 14C presents proven practices for providing these safety devices for offshore production platforms. Proper application of these practices, along with good design, maintenance, and operation of the entire production facility, should provide an operationally safe and pollution-free production platform.

The MMS's responsibilities under OPA 90 include spill prevention in Federal and State offshore waters, review and approval of oil-spill response plans (OSRP's), inspection of oil-spill containment and cleanup equipment, and ensuring oil-spill financial responsibility. The MMS regulations (30 CFR 254) require that all owners and operators of oil handling, storage, or transportation facilities located seaward of the coastline submit an OSRP for approval. The regulation at 30 CFR 254.2 requires that an OSRP must be submitted and approved before an operator can use a facility, or the operator must certify in writing to the MMS that it is capable of responding to a "worst-case" spill or the substantial threat of such a spill. The facility must be operated in compliance with the approved OSRP or the MMS-accepted "worst-case" spill certification. Owners or operators of offshore pipelines are required to submit an OSRP for any pipeline that carries oil, condensate, or gas with condensate; pipelines carrying essentially dry gas do not require an OSRP. The OSRP describes how an operator intends to respond to an oil spill. The OSRP may be site-specific or regional. The Emergency Response Action Plan within the OSRP outlines the availability of spill containment and cleanup equipment and trained personnel. It must ensure that full-response capability can be deployed during an oil-spill incident. The OSRP includes an inventory of appropriate equipment and materials, their availability, and the time needed for deployment. All MMS-approved OSRP's must be reviewed at least every two years and all resulting modifications must be submitted to MMS within 15 days whenever

(1) a change occurs that appreciably reduces an owner/operator's response capabilities;

(2) a substantial change occurs in the worst-case discharge scenario or in the type of oil being handled, stored, or transported at the facility;

(3) there is a change in the name(s) or capabilities of the oil-spill removal organizations cited in the OSRP; or

(4) there is a change in the applicable Area Contingency Plans.

The responsible party for every covered offshore facility must demonstrate oil-spill financial responsibility (OSFR) as required by OPA 90 (30 CFR 253). A covered offshore facility is any structure and all of its components, equipment, pipeline, or device (other than a vessel or other than a pipeline or deepwater port licensed under the Deepwater Port Act of 1974) used for exploring, drilling, or producing oil, or for transporting oil from such facilities. The MMS ensures that each responsible party has sufficient funds for removal costs and damages resulting from the accidental release of liquid hydrocarbons into the environment for which the responsible party is liable.

Air Emissions

The OCSLA (43 U.S.C. 1334(a)(8)) requires the Secretary of the Interior to promulgate and administer regulations that comply with the National Ambient Air Quality Standards (NAAQS) pursuant to the Clean Air Act (CAA) (42 U.S.C. 7401 *et seq*.) to the extent that authorized activities significantly affect the air quality of any State. Under provisions of the CAA Amendments (CAAA) of 1990, the USEPA Administrator has jurisdiction and, in consultation with the Secretary of the Interior and the Commandant of the Coast Guard, established the requirements to control air pollution in OCS areas of the Pacific, Atlantic, Arctic, and eastward of 87°30′W. longitude in the GOM. The OCS area westward of 87°30′W. longitude in the Gulf is under MMS air quality jurisdiction.

For OCS air emission sources located east of 87°30′W. longitude and within 25 mi of the States' seaward boundaries, the requirements are the same as the requirements that would be applicable if the source were located in the corresponding onshore area. The USEPA requirements for these OCS areas are at 40 CFR 55, Appendix A. For emission sources located beyond the 25 mi of the States' boundaries, the sources are subject to Federal requirements for Prevention of Significant Deterioration (PSD). The regulations also establish procedures to allow the USEPA Administrator to exempt any OCS source from a control technology requirement if it is technically infeasible or poses unreasonable threat to health or safety.

For OCS air emission sources west of 87°30′W. longitude, the MMS established the regulations at 30 CFR 250 Subpart C to comply with the Clean Air Act. The regulated pollutants include carbon monoxide, suspended particulates, sulphur dioxide, nitrogen oxides, total hydrocarbons, and volatile organic compounds (as a precursor to ozone). In areas where hydrogen sulfide may be present, operations are regulated by 30 CFR 250.417. All new or supplemental EP's and DOCD's must include air emissions information sufficient to make an air quality determination. The MMS regulations provide for the collection of information about potential sources of pollution in order to determine whether projected emissions of air pollutants from a facility may result in onshore ambient air concentrations above USEPA significance levels and to identify appropriate emissions controls to prevent accidents and air quality deterioration.

Emissions data for new or modified onshore facilities directly associated with proposed OCS activities are required to be included in the development plan to enable each affected State to make a determination of the effects on its air quality.

The MMS uses a three-level hierarchy of criteria to evaluate the potential impact of offshore emission sources upon onshore receptors. The evaluation criteria are (1) exemption level, (2) significance level, and (3) maximum allowable increase. If the proposed activities exceed the criteria at the first level, they are then evaluated against the set of criteria at the next level; the same for the second to third levels.

The first step is to compare the worst-case emissions to the MMS exemption criteria. This corresponds to the USEPA screening step. Since there is no screening model suitable for use with offshore emission sources, MMS uses simple equations to calculate the screening thresholds or "exemption levels." If the emissions associated with the proposed activities are below the exemption levels, the proposed actions are exempt from further air quality review and modeling with the Offshore and Coastal Dispersal (OCD) model is not required.

The second step requires refined modeling using OCD if the exemption level is exceeded. The modeled onshore impacts are compared to MMS's codified significance levels. In the event the significance level is exceeded in the second step, the operator would be required to apply best available control technology and remodel the resulting emissions. If the resulting impact is still above the significance level, the operator must comply with the third step by demonstrating that the cumulative impact to onshore areas is below the maximum allowable increase or the operator must offset the

emissions. The maximum allowable increase is determined by the PSD classification of the potentially affected onshore area. The maximum allowable increase for a Class II area is higher than for a Class I area. For large sources potentially affecting Class I areas, the MMS actively consults with the designated Federal land manager. The MMS consults with the Federal land manager for all permanent large sources affecting Class I areas, including any modification to an existing large facility that results in any increase in emissions above the previously approved levels of the PSD regulated pollutants.

It is worth noting that to date no plan has ever been submitted in the GOMR that required the need to go the third step in the review process — all MMS-approved emissions are below the MMS's significance levels. Additionally, to date, no Gulf Region plan has had to undergo Federal land manager consultation for particulate matter, and all plans that underwent Federal land manger consultation for NO_2 or SO_2 were deemed to "not significantly consume the increment."

Flaring

Flaring is the venting and/or burning of natural gas from a specially designed boom. Flaring systems are also used to vent gas during well testing or during repair/installation of production equipment. The MMS heavily regulates flaring to minimize the loss of natural gas resources. The MMS policy, in accordance with 30 CFR 250.175, is to not allow flaring or venting of natural gas on an extended basis, but regulations do provide for some limited volume, short duration (typically 2-14 days) flaring or venting upon approval by MMS. Such flaring or venting may be conducted as part of unloading/testing operations that are necessary to remove potentially damaging completion fluids from the well bore, to provide sufficient reservoir data for the operator to evaluate a reservoir and development options, and in emergency situations. Under extraordinary circumstances, special flaring approval may be granted. Substantial justification must be provided for each flaring request.

Hydrogen Sulfide Contingency Plans

The operator of a lease must request that MMS make a determination regarding the presence of hydrogen sulfide (H_2S) gas pursuant to 30 CFR 250.203, 30 CFR 250.204, and 30 CFR 250.417. The MMS classifies an area of proposed operations as (1) H_2S absent, (2) H_2S present, or (3) H_2S unknown.

All operators on the OCS involved in production of sour hydrocarbons that could result in atmospheric H_2S concentrations above 20 ppm are required to file an H_2S contingency plan. This plan must include procedures to ensure the safety of the workers on the production facility and contingencies for simultaneous drilling, well-completion, well-workovers, and production operations. The lessee/operator must take all necessary and practicable precautions to protect personnel from the toxic effects of H_2S and to mitigate the adverse effects of H_2S to property and the environment. All operators are required to adhere to the National Association of Corrosion Engineers' (NACE) *Standard Material Requirement MRO175-97 for Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment* (NACE International, 1997). These engineering standards enhance the integrity of the infrastructure used to produce the sour oil and gas. In addition, the API has also developed *Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide* (API, 1995).

The MMS issued rules governing requirements for preventing hydrogen sulfide releases, detecting and monitoring hydrogen sulfide and sulphur dioxide, protecting personnel, providing warning systems, and establishing requirements for hydrogen sulfide flaring. NTL 98-16, titled "Hydrogen Sulfide (H_2S) Requirements," provides clarification, guidance, and information on the requirements. The NTL provides guidance on sensor location, sensor calibration, respirator breathing time, measures for protection against sulfur dioxide, requirements for classifying an area for the presence of H_2S, requirements for flaring and venting of gas containing H_2S, and other issues pertaining to H_2S-related operations.

Archaeological Resources Regulation

The archaeological resources regulation at 30 CFR 250.194 grants specific authority to each MMS Regional Director to require archaeological resource surveys and reports where deemed necessary. The technical requirements of the archaeological resource surveys are detailed in NTL 98-06, issued by the MMS, Gulf of Mexico OCS Region. The regulation at 30 CFR 250.126 requires the lessee to include an archaeological report with an EP or DOCD. If the evidence suggests that an archaeological resource may

be present, the lessee must either locate the site of any operation so as not to adversely affect the area where the archaeological resource may be, demonstrate that an archaeological resource does not exist, or demonstrate that archaeological resources will not be adversely affected by operations. If the lessee discovers any archaeological resource while conducting approved operations, operations must be immediately stopped and the discovery reported to the MMS Regional Director.

Coastal Zone Management Consistency Review and Appeals for Plans

Pursuant to the Coastal Zone Management Act (CZMA), a State with an approved Coastal Zone Management (CZM) plan reviews certain OCS activities to determine whether they will be conducted in a manner consistent with their approved plan. This review authority is applicable to activities described in detail in any plan for the exploration or development of any area that has been leased under the OCSLA and that affects any land or water use or natural resource within the State's coastal zone (16 U.S.C. 1456(c)(3)(B)). The MMS may not issue a permit for activities described in an EP or DOCD unless the State concurs or is conclusively presumed to have concurred that the OCS plan is consistent with its CZM plan (43 U.S.C. 1340(c) and 1351(d); 16 U.S.C. 1456(c)(3)).

The information requirements for CZM purposes are found at 30 CFR 250.203 and 250.204 and are discussed in NTL 2000-G10. Under the CZMA, each State with an approved CZM plan may require information that is different than that specifically outlined in these regulations. All of the Gulf States have approved CZM programs. Requirements for the abbreviated format of environmental information for Texas, Louisiana, Mississippi, and Alabama, and the long-form format required for activity determined to affect the State of Florida are given in Appendices H and I of NTL 2000-G10. A State CZM agency is required to ensure timely public notice of their receipt of an OCS plan that has been submitted for their CZM consistency determination (15 CFR 930.78(b) and 15 CFR 930.84(a)).

In accordance with the requirements of 15 CFR 930.76(b), the MMS, Gulf of Mexico OCS Region sends copies of an OCS plan, including the consistency certification and other necessary information, to the designated State CZM agency by receipted mail. If no State-agency objection is submitted by the end of the consistency review period, MMS shall presume consistency concurrence by the State (15 CFR 930.79(a) and (b)). Similar procedures are followed for amended, revised, and modified plans.

If a written consistency concurrence is received from the State, the MMS may then approve any permit for activities described in the OCS plan in accordance with 15 CFR 930.63(c). The MMS does not impose or enforce additional State conditions when issuing permits. The MMS can require modification of a plan if the operator has agreed to certain requirements requested by the State.

If the MMS receives a written consistency objection from the State containing all the items required in 15 CFR 930.79(c) before the expiration of the review period, the MMS will not approve any activity described in the OCS plan unless (1) the operator amends the OCS plan to accommodate the objection in accordance with 15 CFR 930.83 and concurrence is subsequently received or conclusively presumed; (2) upon appeal, the Secretary of Commerce, in accordance with 15 CFR 930.120, finds that the OCS plan is consistent with the objectives or purposes of the CZMA or is necessary in the interest of national security; or (3) the original objection is declared invalid by the courts.

Best Available and Safest Technologies

To assure that oil and gas exploration, development, and production activities on the OCS are conducted in a safe and pollution-free manner, 43 U.S.C. 1347(b) of the OCSLA, as amended, requires that all OCS technologies and operations use the best available and safest technology (BAST) that the Secretary determines to be economically feasible. Conformance to the standards, codes, and practices referenced in 30 CFR 250 is considered to be the application of BAST. These standards, codes, and practices include requirements for state-of-the-art drilling technology, production safety systems, completion of oil and gas wells, oil-spill response plans, pollution-control equipment, and specifications for platform/structure designs. The MMS conducts periodic offshore inspections, and continuously and systematically reviews OCS technologies to ensure that the best available and safest technologies are applied to OCS operations. The BAST is not required when the MMS determines that the incremental benefits are clearly insufficient to justify increased costs; however, it is the responsibility of an operator of an existing operation to demonstrate why application of a new technology would not be feasible. This requirement is applicable to equipment and procedures that, if failed, would have a significant effect on

safety, health, or the environment, unless benefits clearly do not justify the cost (30 CFR 250.107(c) and (d)).

The BAST concept is addressed in the MMS, Gulf of Mexico OCS Region by a continuous effort to locate and evaluate the latest technologies and to report on these advances at periodic Regional Operations Technology Assessment Committee (ROTAC) meetings. A part of the MMS staff has an ongoing function to evaluate various vendors and industry representatives' innovations and improvements in techniques, tools, equipment, procedures, and technologies applicable to oil and gas operations (drilling, producing, completion, and workover operations). This information is provided to MMS district personnel at ROTAC meetings. The requirement for the use of BAST has, for the most part, been an evolutionary process whereby advances in equipment, technologies, and procedures have been integrated into OCS operations over a period of time. An awareness by both MMS inspectors and the OCS operators of the most advanced equipment and technologies has resulted in the incorporation of these advances into day-to-day operations. An example of such an equipment change that evolved over a period of time would be the upgrading of diverter systems on drilling rigs from the smaller diameter systems of the past to the large-diameter, high-capacity systems found on drilling rigs operating on the OCS today. Another example of a BAST-required equipment change would be the requirement to replace subsurface-controlled, subsurface safety valves with surface-controlled, subsurface safety-valve systems, which incorporate a more positive closure design and operation.

Production Facilities

The MMS's regulations governing oil and gas production safety systems are found in 30 CFR 250 Subpart H. Production safety equipment used on the OCS must be designed, installed, used, maintained, and tested in a manner to assure the safety and protection of the human, marine, and coastal environments. All tubing installations open to hydrocarbon-bearing zones below the surface must be equipped with safety devices that will shut off the flow from the well in the event of an emergency, unless the well is incapable of flowing. Surface- and subsurface-controlled safety valves and locks must conform to the requirements of 30 CFR 250.801. All surface production facilities, including separators, treaters, compressors, headers, and flowlines must be designed, installed, and maintained in a manner that provides for efficiency, safety of operations, and protection of the environment. Production facilities also have stringent requirements concerning electrical systems, flowlines, engines, and firefighting systems. The safety-system devices are tested by the lessee at specified intervals and must be in accordance with API RP 14 C Appendix D and other measures.

Personnel Training and Education

An important factor in ensuring that offshore oil and gas operations are carried out in a manner that emphasizes operational safety and minimizes the risk of environmental damage is the proper training of personnel. Under 30 CFR 250 Subpart O, the MMS has consolidated its training requirements. The goal of the regulations (30 CFR 250.1502) is to ensure that employees who work in the following areas receive approved training that will result in safe and clean operations: (1) drilling well control, (2) well-completion/well-workover well control, (3) well-servicing well control, and (4) production safety systems. The elements of each of these training classes are listed in 30 CFR 250.1520. The MMS also accredits training organizations to teach the classes (30 CFR 250 1514). The MMS specifies requirements for a written test and hands-on simulator and well test (30 CFR 250.1518 and 1519).

The mandatory Drilling Well-Control Training Program was instituted by MMS in 1979. In 1983, the mandatory Safety Device Training Program was established to ensure that personnel involved in installing, inspecting, testing, and maintaining safety devices are qualified. As a preventive measure, all offshore personnel must be trained to operate oil-spill cleanup equipment, or the lessee must retain a trained contractor(s) to operate the equipment for them. In addition, MMS offers numerous technical seminars to ensure that personnel are capable of performing their duties and are incorporating the most up-to-date safety procedures and technology in the petroleum industry. In 1994, the Office of Safety Management (OSM) created the MMS Offshore Training Institute to develop and implement an inspector training program. The institute introduced state-of-the art multimedia training to the inspector work force and has produced a series of interactive computer training modules.

Structure Removal and Site Clearance

Under MMS operating regulations and lease agreements, all lessees must remove objects and obstructions upon termination of a lease. Lessees must ensure that all objects related to their activities are removed following termination of their lease. NTL 98-26, dated November 30, 1998, establishes site clearance verification procedures that include trawling the cleared site over 100 percent of the established clearance radii by a licensed shrimper. The MMS requires lessees to submit a procedural plan for site clearance verification. Lessees are required to file reports on the results of their site clearance activities. Pipelines may be abandoned in place.

Lessees/operators must notify the MMS at least 30 days before a structure removal and provide information that includes the following: complete identification of the structure; size of the structure (number and size of legs and pilings); removal technique to be employed (if explosives are to be used, the amount and type of explosive per charge); and the number and size of well conductors to be removed. At present, if a structure removal involves the use of explosives, an EA is prepared and an Endangered Species Act Section 7 consultation is initiated with NOAA Fisheries. The NOAA Fisheries issued a "standard" Biological Opinion on July 25, 1988, which covers removal operations that meet specified criteria pertaining to the size of explosive charge used, detonation depth, and number of blasts per structure grouping. The use of explosives to cut offshore oil/gas structure legs/pilings for removal could cause injury or death to protected marine mammals and endangered sea turtles. The MMS has consulted with NOAA Fisheries and, together, the two agencies have a history of developing structure removal precautions. The MMS continues to work with NOAA Fisheries on this issue as structures are placed in deeper waters of the Gulf and as more data is gathered concerning explosive removals. The MMS, NOAA Fisheries, and lessees are cooperating in an observer/monitoring program to determine the presence of marine mammals and/or sea turtles in the vicinity of the structure removals. The NOAA Fisheries sends approved observers to every structure removal where explosives are used. The NOAA Fisheries Observer Program began in 1986. The number of documented sea turtles impacted by explosives was two during 1986-1994 (Gitschlag and Herczeg, 1994; NRC, 1996), one in 1997 (Gitschlag, personal communication, 1999), one in 1998 (Shah, personal communication, 1998), and one in 2001 (Gitschlag, personal communication, 2001). A total of six additional sea turtles have been captured and removed prior to detonation of explosives for platform removal (Gitschlag and Herczeg, 1994; Gitschlag et al., 1997). If cetaceans are observed in the vicinity of a removal site, detonations are postponed until the animals have vacated the area.

Rigs-to-Reefs

Rigs-to-Reefs (RTR) is a catchy term for converting obsolete, nonproductive offshore oil and gas platforms to designated artificial reefs (Dauterive, 2000). Disposal of obsolete offshore oil and gas platforms is not only a financial liability for the oil and gas industry but can be a loss of productive marine habitat. The use of obsolete oil and gas platforms for reefs has proven to be highly successful. Their availability, design profile, durability, and stability provide a number of advantages over the use of traditional artificial reef materials. To capture this recyclable and valuable fish habitat, the States of Louisiana, Texas, and Mississippi in 1986, 1989, and 1999, respectively, passed enabling legislation and signed into law RTR plans for their respective States. Alabama and Florida have no RTR legislation. The State laws set up a mechanism to transfer ownership and liability of the platform from oil and gas companies to the State when the platform ceases production and the lease is terminated. The company (donor) saves money by donating a platform to the State (recipient) for a reef rather than scrapping the platform onshore. The industry then donates 50 percent of the savings to the State to run the State's artificial reef program. Since the inception of the RTR plans, more than 141 retired platforms have been donated and used for reefs in the Gulf of Mexico.

1.6. OTHER OCS-RELATED ACTIVITIES

The MMS has programs and activities that are OCS related but not specific to the leasing process or to the management of exploration, development, and production activities. These programs include both environmental and technical studies, and cooperative agreements with other Federal and State agencies

for NEPA work, joint jurisdiction cooperative efforts, inspection actives, and regulatory enforcement. The MMS also participates in industry research efforts and forums.

Environmental Studies Program

An Environmental Studies Program (ESP) was established in accordance with Section 20 of the OCSLA. The program funds studies to establish information needed for assessment and management of environmental impacts on the human, marine, and coastal environments of the OCS and the coastal areas that may be affected by oil and gas development. As a part of the ESP, the Gulf of Mexico Region has funded more than 350 completed or ongoing environmental studies. The types of studies funded include

- literature reviews and baseline studies of the physical, chemical, and biological environment of the shelf;
- literature review and studies of the physical, chemical, and biological environment of deep water (>300 m);
- studies of the socioeconomic impacts along the Gulf Coast; and
- studies of the effects of oil and gas activities on the marine environment.

Information collected through these studies is used to evaluate the impacts of oil and gas activities on the Gulf of Mexico OCS.

Technical Assessment & Research Program

The Technical Assessment & Research (TA&R) Program supports research associated with operational safety and pollution prevention as well as oil-spill response and cleanup capabilities. The TA&R Program is comprised of two functional research activities: (1) operational safety and engineering research; and (2) oil-spill research. The TA&R Program has four primary objectives.

- Technical Support – Providing engineering support in evaluating industry operational proposals and related technical issues and in ensuring that these proposals comply with applicable regulations, rules, and operational guidelines and standards.
- Technology Assessment – Investigating and assessing industry applications of technological innovations and ensuring that governing MMS regulations, rules, and operational guidelines ensure the use of the best available and safest technologies (BAST) (Chapter 1.5).
- Research Catalyst – Promoting and participating in industry research initiatives in the fields of operational safety, engineering research, and oil-spill response and cleanup research.
- International Regulations – Supporting international cooperative efforts for research and development initiatives to enhance the safety of offshore oil and natural gas activities and the development of appropriate regulatory program elements worldwide.

Interagency Agreements

Cooperating Agency Agreements under NEPA

Section 1500.5(b) of the CEQ implementing regulations (40 CFR 1500.5(b)) encourages agency cooperation early in the NEPA process. A Federal agency can be a lead, joint lead, or cooperating agency. A lead agency manages the NEPA process and is responsible for the preparation of an EIS; a joint lead Agency shares these responsibilities; and a cooperating agency that has jurisdiction by law and has special expertise with respect to any environmental issue shall participate in the NEPA process upon the request of the lead agency.

When an agency is requested and agrees to become a Cooperating Agency, the cooperating and lead agencies usually enter into a Cooperating Agency Agreement. The Agreement details the responsibilities of each participating agency.

The MMS has entered into agreements with State and Federal agencies. The MMS, as lead agency, has requested other Federal agencies to enter into Cooperating Agency Agreements (e.g., the Destin Dome 56 Unit project); other agencies have requested MMS to become a cooperating agency (e.g., the Gulfstream Gas Pipeline project). The MMS has been, is, and will be involved in Cooperating Agency Agreements with USEPA, COE, Federal Energy Regulatory Commission (FERC), and the Department of Transportation. Some projects, such as major gas pipelines across Federal waters and projects under the Deepwater Port Act of 1974, can require cooperative efforts by multiple Federal and State agencies.

Memorandum of Understanding Between MMS and Coast Guard

Given the overlap in jurisdictions of MMS and the Coast Guard and the large array of regulatory provisions pertaining to activities on the OCS, MMS and the Coast Guard have established a formal Memorandum of Understanding (MOU) that delineates lead responsibilities for managing OCS activities in accordance with OCSLA and OPA 90. The MOU, dated August 1989 and updated December 1998 (and published in the *Federal Register* on January 15, 1999), is designed to minimize duplication and promote consistent regulation of facilities under the jurisdiction of both agencies.

Generally, the MOU identifies MMS as the lead agency for matters concerning the equipment and operations directly involved in the production of oil and gas. These include, among others, design and operation of risers, permanent mooring foundations of the facility, drilling and well production and services, inspection and testing of all drilling-related equipment, and platform decommissioning. Issues regarding the safe operation of the facility, its systems, and the equipment needed to support all operations on board generally fall under the jurisdiction of the Coast Guard. These include, among others, design of vessels, their seakeeping characteristics, propulsion and dynamic positioning systems, supply and lightering procedures and equipment, utility systems, safety equipment and procedures, and pollution prevention and response procedures. Both agencies will continue to be responsible for accident investigations. For incidents for which both agencies have an investigative interest in the systems involved, one agency will assume lead investigative responsibility with supporting participation provided by the other agency.

International Activities and Marine Minerals Division

The International Activities and Marine Minerals Division (INTERMAR) has a dual role in MMS. On behalf of MMS, it functions as a liaison for agency involvement in International Activities and it provides policy direction for management of minerals resources on the Federal OCS. The MMS's nonenergy minerals program in the Gulf is described in Chapter 4.1.3.2.2.